SANYO

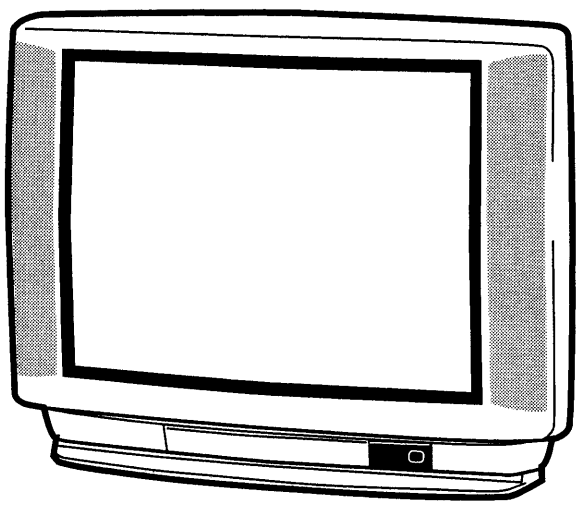
Colour Television Service Manual CE21DN3-B

Chassis:

EB4-A(MKII)

Service Ref.No.:

CE21DN3-B-01



Give complete "SERVICE REF. NO." for parts order or servicing, it is shown on the rating sheet on the cabinet back of the TV set.

Note
This TV receiver will not work properly in foreign countries where the television transmission system and power source differ from the design specifications. Refer to the specifications for the design specifications

Contents

Safety precautions 2
Block diagram 3
Cabinet Disassembly 4
Circuit description 5-6
Service control adjustment 7
Circuit alignment 8
Important notice 9
Special Function 10
Cabinet Parts List 11
Electric Parts List 12-20

Part No. SKSM0230 F3JMV MAY 1998

SAFETY PRECAUTION

1: An isolation transformer should be connected in the power line between the receiver and the AC line when a service is performed on the primary of the converter transformer of the set.
2: Comply with all caution and safety-related notes provided on the cabinet back, inside the cabinet, on the chassis or the picture tube.
3: When replacing a chassis in the cabinet, always be certain that all the protective devices are installed properly, such as, control knobs, adjustment covers or shields, barriers, isolation resistor-capacitor networks etc.Before returning any television to the customer, the service technician must be sure that it is completely safe to operate without danger of electrical shock.

X-RADIATION PRECAUTION

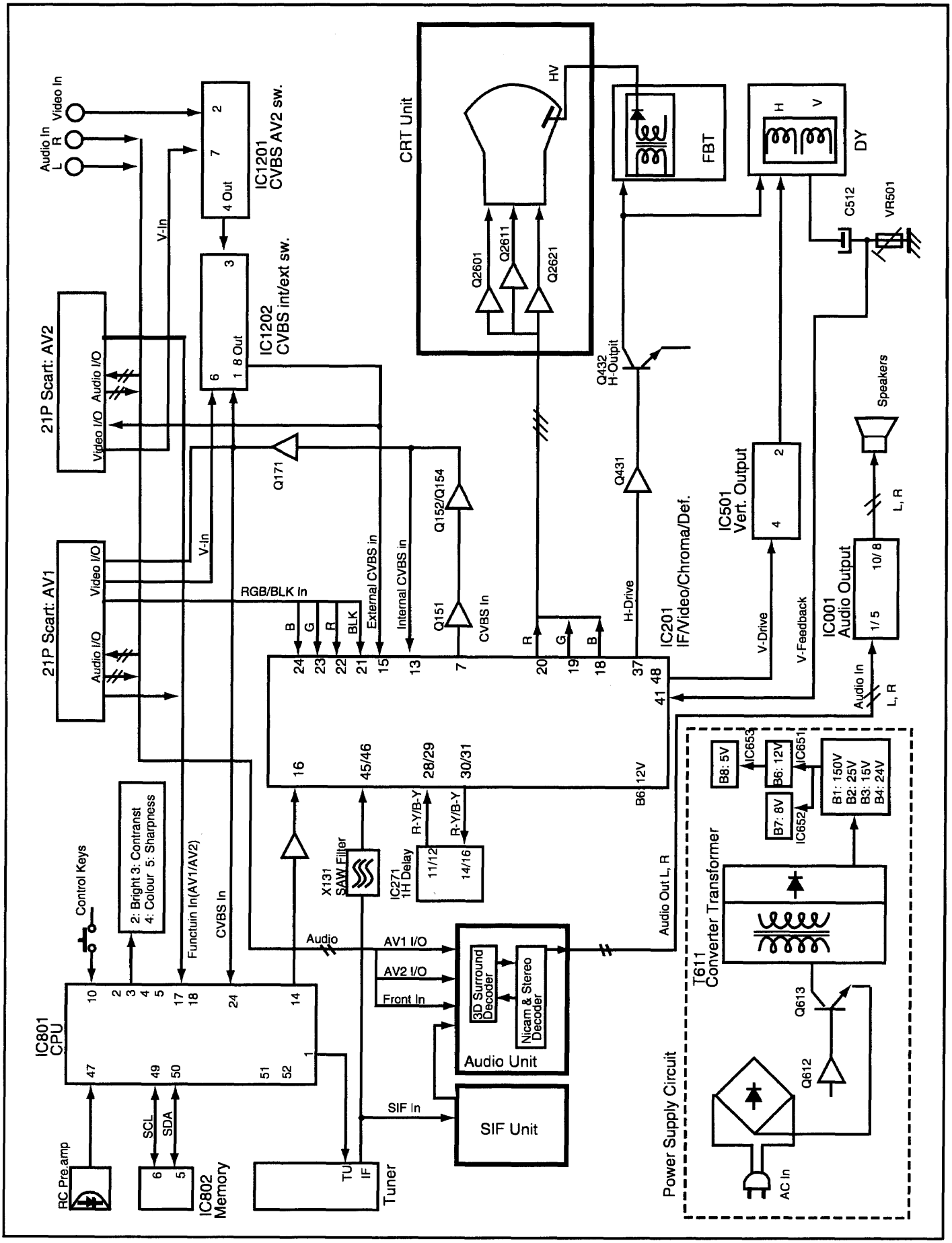
The primary source of X-RADIATION in the television receiver is the picture tube. The picture tube is specially constructed to limit X-RADIATION emissions. For continued X-RADIATION protection, the replacement tube must be the same type as the original including suffix letter. Excessive high voltage may produce potentially hazardous X-RADIATION. To avoid such hazards, the high voltage must be maintained within specified limit. Refer to this service manual, high voltage adjustment for specific high voltage limit. If high voltage exceeds specified limits, take necessary corrective action. Carefully follow the instructions for +B1 volt power supply adjustment, and high voltage adjustment to maintain the high voltage within the specified limits.

PRODUCT SAFETY NOTICE

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by mark /!\ in the parts list and the schematic diagram designate components in which safety can be of special significance. It is particularly recommended that only parts designated on the parts list in this manual be used for component replacement designated by mark /!\ . No deviations from resistance wattage or voltage ratings may be made for replacement items designated by mark /!\ .

BLOCK DIAGRAM

This is a diagram for all models and therefore differs slightly from the actual block diagram.



CIRCUIT DESCRIPTION

1. POWER SUPPLY

The power supply circuit of the EB4-A chassis is composed of a rectifier smoothing circuit, an oscillation circuit, a control circuit and an output rectifier circuit. The AC input voltage is full-wave rectified by the rectifier smoothing circuit, and an unstable DC voltage is generated at both terminals of the smoothing capacitor C607. This voltage is input to the oscillation circuit. The oscillation circuit is provided with a blocking oscillator circuit that switches the switching transistor Q613 ON and OFF, and an oscillation frequency and a duty square wave pulse are generated in the input windings according to operation of the control circuit. A square-wave pulse whose size is dependent on the turn ratio of the input and output windings is obtained in the output winding. This is rectified in the output rectifier circuit, and the desired DC voltage is obtained.

2. IF & DEFLECTION (TDA8361)

The IF output signal from the tuner passes through the SAW filter, and it is input to pin45 and pin46 of IC201. The signal input to the IC passes through the IF amplifier, video detection and video amplifier circuits and is output from pin7 as a composite video signal. And after this signal is converted to impedance at Q151, supplies to the video and chroma amplifier stages.

The sync.-separation circuit separates the video signals applied to pin13(internal video signal) or pin15(external video signal) to vertical- and horizontal-sync. signals respectively. The horizontal oscillator requires no external components and is fully integrated. The oscillator is always running when the start-pin36 is supplied with 8V. Horizontal drive signal is output from pin37. VR361 is for adjustment of the horizontal centring. The separated vertical-sync. signal from sync. separation circuit passes through the vertical-separation circuit, and applied to trigger divider circuit. The horizontal oscillation pulse and input vertical sync. pulse are monitored by the trigger divider circuit, and switching 50Hz and 60Hz system, the vertical amplitude automatically adjusted for 50Hz and 60Hz. The output signal from the trigger divider is triggered vertical oscillation circuit consisting of C351, R352 and pin42, and vertical drive pulse is output from pin43. VR501 is for changing the amount of AC feedback applied to pin41 and for adjustment of the vertical amplitude.

3. VIDEO CHROMA & R.G.B. (TDA8361)

The composite video signal output from the pin7 of IC101 passes through Q151-Q154, and it is supplied to pin13. The external video signal output from SCART is supplied to pin15. The video signal input to pin13 or pin15 is separated to luminance (Y) signal and chroma signal in IC201. These pins are used in common with H/V-sync. separation input. The peaking of Y signal is adjusted by DC voltage of pin14. ("SHARPNESS" control) The chroma signal is divided into R-Y and B-Y chroma signals, demodulated in IC201, and output from pin30 (R-Y) and pin31 (B-Y). These chroma signals pass through the 1H delay line circuit (IC271), and they are input to pin29 (R-Y) and pin28 (B-Y). These R-Y/B-Y signals pass through RGB matrix circuit and RGB selector circuit of IC101. The internal RGB signals are generated in RGB matrix circuit and the RGB selector, consisting linear amplifiers, clamps and selects either the internal RGB signals or the external RGB signals input from pin22(R), pin23(G), pin24(B). Selection is controlled by the voltage at the RGB switch control (pin21) and mixed RGB modes are possible since RGB switching is fast. The RGB switch also functions as a fast blanking pin by blanking the RGB output stages; here internal and external RGB signals are overruled. The colour gain is controlled by DC voltage of pin26. ("COLOUR" control) The contrast control voltage present at pin25, and the brightness control voltage present at pin17 controls DC level of RGB signals. The RGB signals are finally buffered before being available at the RGB output pins [pin20 (R), pin19 (G), pin18 (R)].

4. AUDIO OUTPUT(TDA7263M)

The audio signals output from the audio unit are input to pin1(L) and 5(R) of IC171 and passes through the pre-amplifier circuit and drive circuit, after which it is input to the audio amplifier. The audio amplifier is an SEPP (single-ended, push-pull) OTL type and output to pin8(R) and 10(L) to directly drive the speakers.

5. VERTICAL OUTPUT (LA7832/LA7832)

An IC (LA7832/LA7833) is used for the vertical output circuit in this chassis. The vertical drive pulse from pin43 of IC201 is input to pin4 of IC501. This pulse drives IC501, and vertical scanning is performed. In the first half of scanning a deflecting current is output from pin2 and passes through the following path:

Vcc(B4) → D501 → pin3 → pin2 → DY → C512 → VR501/R509. An electric charge is then stored in C512. In the last half of scanning the current path is C512 → DY → pin2 → pin1 → VR501/R509 → C512. In this way, an amplifying sawtooth waveform current flows directly to DY to perform electron beam defection. Next, in the first half of the banking period the vertical drive pulse suddenly becomes OFF, and in order to reduce the current flowing to DY, the current path becomes as follows by the inductance of DY:

DY → pin2 → pin1 → VR501/R509 → C512 → DY. Also, when the charge of DY has dissipated, the current path becomes Vcc24V → pin6 → pin7 → C502 → pin3 → pin2→ DY → C512 → VR501/R509, and when the prescribed current value is reached, the vertical drive pulse becomes ON. This completes one cycle.

6. HORIZONTAL OUTPUT

A horizontal oscillation signal is output from pin37 of IC201 and switches the drive transistor Q431. This switching signal is current amplified by the drive transformer T431 and drives the output transistor Q432. When Q432 becomes ON, an amplifying current flows directly to DY through C441 → DY → 0432 → GND, and defection is performed in the last half of the scanning period. Next, when Q432 becomes OFF, the charge that had been stored in DY up to that point releases a resonance current to the resonant capacitors C421/C423 and charges them. The current stored in C421/C423 is then flowed back to DY, and an opposite charge is then stored in DY. This opposite charge then switches the dumper diode in Q432 ON, the resonance state is completed, and an amplifying current is then flowed again directly to DY through the dumper diode. By this means, deflection in the first half of the scanning period is performed, and when Q432 becomes ON at the end of the first half of the scanning period, deflection during the last half is begun, thus completing one cycle.

In the PCC circuit consisting of Q461 and Q462, the parabola signal supplied from the vertical circuit is added at the horizontal output stage and pincushion compensation is performed by varying the DC voltage bias. Further, the ABL voltage is feedback to the base of Q462 to compensate for width variations due to variations in the beam current.

7. CPU <System and Teletext Control>

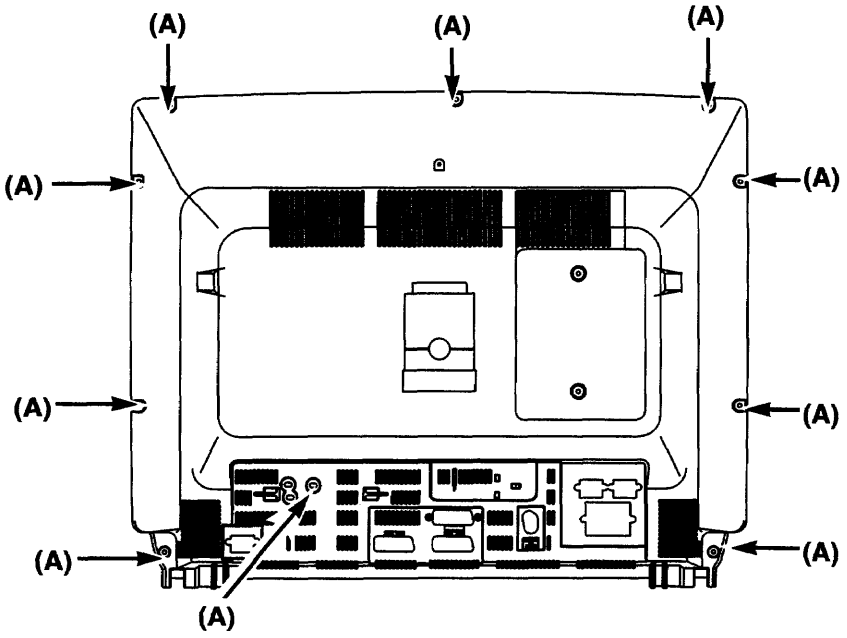
Pin description

Pin1: Tuning voltage output
Pin2: Brightness control output (6-bit DAC)
Pin3: Contrast control output (6-bit DAC)
Pin4: Colour control output (6-bit DAC)
Pin5: Sharpness control output(6-bit DAC)
Pin6: Not used (GND)
Pin7: Not used (GND)
Pin8: Power ON/OFF output (H:ON)
Pin9: AFT signal input
Pin10: Option SW1 & Keyboard scan input (DC)
Pin11: Option SW2
Pin12: 50/60Hz switch input (50Hz: Hi)
Pin13: GND
Pin14: TV/AV switch output (TV: Hi)
Pin15: S-VHS switch output (S-VHS: Hi)
Pin16: Option SW3 (2AV: Hi)
Pin17: Function signal input for SCART1
Pin18: Function signal input for SCART2
Pin19: Power LED drive output1
Pin20: Option SW4 & Power LED drive output2
Pin21: Ignore output
Pin22: GND
Pin23: CVBS input0 (Internal)
Pin24: CVBS input1 (Internal/External)
Pin25: Black
Pin26: IREF
Pin27: Odd/Even output
Pin28: GND
Pin29: -
Pin30: V-deflection stop output
Pin31: RGB REF
Pin32: Blue output for OSD
Pin33: Green output for OSD
Pin34: Red output for OSD
Pin35: Blanking output for OSD
Pin36: H-sync. input (Horizontal pulse for OSD)
Pin37: V-sync. input (Vertical pulse for OSD)
Pin38~39: Supply (+5V)
Pin 40: OSC GND
Pin 41: Oscillator input for CPU
Pin 42: Oscillator output for CPU
Pin 43: Reset input
Pin 44: Supply (+5V)
Pin 45: Protect signal input (L:Power circuit defects)
Pin 46: Ident. signal input
Pin 47: R/C signal input
Pin 48: Mute output in no picture
Pin 49: I²C bus SCL (Serial clock)
Pin 50: I²C bus SDA (Serial date)
Pin 51: Option SW5 & Band select output1
Pin 52: Band select output2

CABINET DISASSEMBLY

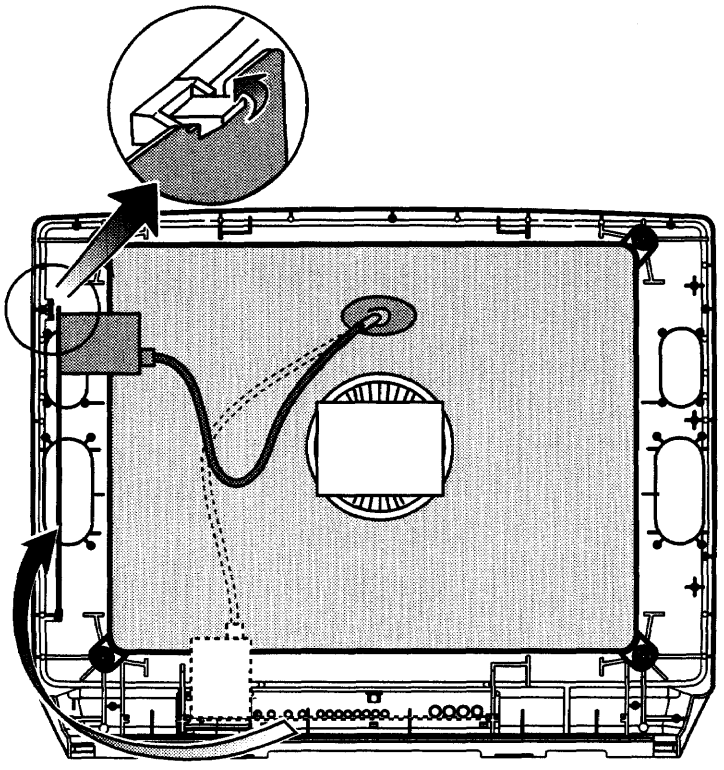
CABINET BACK DISASSEMBLY

1. Remove 10 screws(A).
2. Pull out the cabinet back.



PLACING THE CHASSIS TO SERVICE POSITION

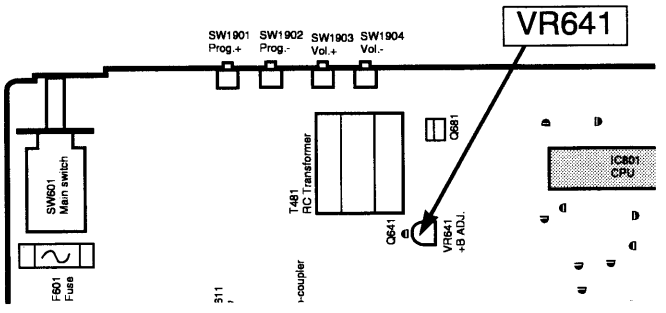
1. Pullout the chassis and put it to the rails on the side cabinet.
2. Fix main board with hook on the top rail.



SERVICE CONTROL ADJUSTMENT

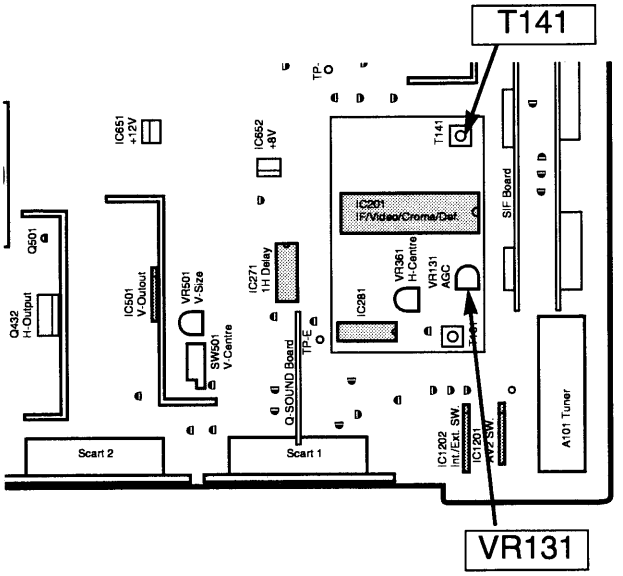
B1 POWER SUPPLY ADJUSTMENT

1. Set VR641 to be mechanical centre before pressing the main switch.
2. Tune the receiver to PAL circular pattern.
3. Set brightness and contrast controls to normal.
4. Connect digital V-meter to test point "TP-B".
5. By using VR641, adjust voltage to 130 ± 0.5 V.



AFT ADJUSTMENT

1. Tune the receiver to the clearest station.
2. By using T141, adjust AFT to obtain the best picture.



AGC ADJUSTMENT

NOTE: *Do not attempt this adjustment with weak signal.*

1. Tune the receiver to the clearest station.
2. Set AGC VR(VR131) in direction which causes snow noise to appear, then in the opposite direction until snow noise just disappears.

GREY SCALE ADJUSTMENT

[SCREEN VR ADJUSTMENT]

1. Tune the receiver to the white pattern.
2. Set brightness and contrast controls to normal.
3. Set VR602and VR612 to be mechanical centre.
4. Turn VR601, VR611 and VR621 fully counter-clockwise.
5. Set mode to one horizontal scanning line, how to set refer to "service mode"
6. Set screen VR for one colour to be just visible.

[BIAS VR ADJUSTMENT]

7. By using VR601, VR611 or VR621, adjust line to be white.
8. Set screen mode OFF, how to set refer to "service mode"

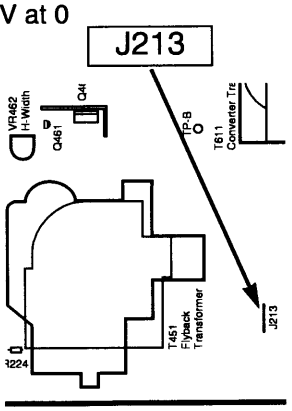
[DRIVE VR ADJUSTMENT]

9. By using VR602 and VR612, adjust white balance.

HIGH VOLTAGE & WIDTH ADJUSTMENT

[HIGH VOLTAGE ADJUSTMENT]

1. Tune the receiver to circular pattern.
2. Set brightness and contrast controls to maximum.
3. Connect digital V-meter to both terminals of R224, and high voltage meter to CRT anode.
4. Confirm high voltage to be 25.0 ± 1 KV at beam current 1.1, and less than 28.0 KV at 0 beam current.



[H-WIDTH ADJUSTMENT]

5. If H-width is too wide or narrow, connect or disconnect a lead wire J213**(for 21 inch)**.
6. Reconfirm high voltage.

H-CENTRE ADJUSTMENT

1. Tune the receiver to circular pattern.
2. Adjust H-centre by using VR361.

V-CENTRE ADJUSTMENT

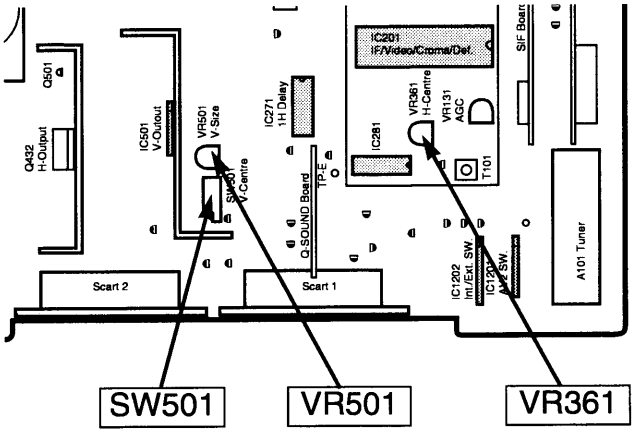
1. Tune the receiver to circular pattern.
2. Adjust V-centre by using SW501.

V-SIZE ADJUSTMENT

1. Tune the receiver to circular pattern.
2. Adjust V-size by using VR501.

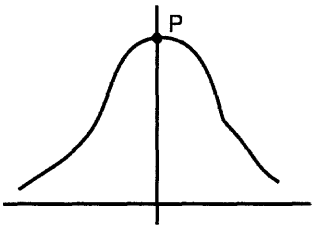
FOCUS ADJUSTMENT

By using FOCUS VR, adjust focus control for good scanning lines.

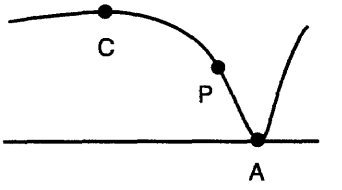


CIRCUIT ALIGNMENT

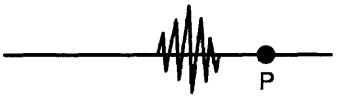
VIF alignment

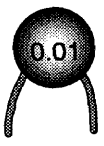
SETTING		Adjustment	Waveform
DC 15.5V AGC voltage (4.3-4.5V) Output probe Input probe Marker frequency Sweep ATT 0dB=176mVrms/75	C644 + IC201-pin48 IC201-pin45 (Side b) IC201-pin7 39.5MHz 20dB	By using T141, adjust "P" to be maximum amplitude.	

Trap alignment (Only required for UK model)

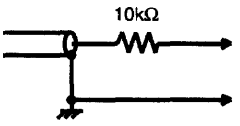
SETTING		Adjustment	Waveform
DC 15.5V Output probe Input probe Marker frequency Sweep ATT 0dB=176mVrms/75	C644 + Tuner IF (Side a) Q101-C 41.5MHz 11dB	By using T101, adjust "A" to be minimum amplitude.	

SIF alignment

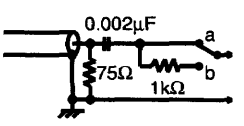
SETTING		Adjustment	Waveform
DC 12V AGC voltage(5V DC) Output probe Input probe Sweep ATT Marker Frequency Tool-A	IC3801-pin9 IC3801-pin13 IC3801-pin5 (Side b) IC3801-pin17 10dB 39.5MHz IC3801-pin6 and ground	1. By using T3801, adjust the VCO oscillation to be "P".	



Tool-A

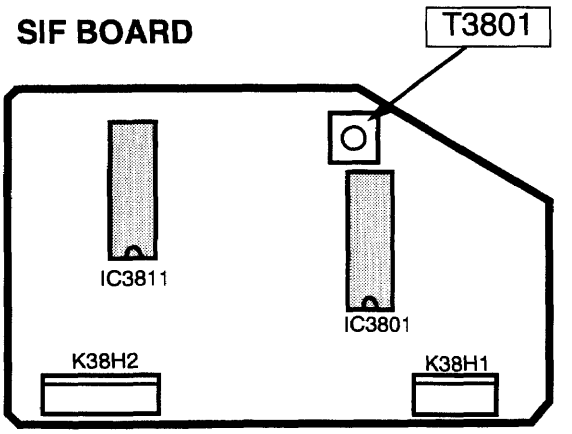


Input probe



Output probe

SIF BOARD



INITIALIZATION (Important Notice)

When you replace a memory IC (IC802), it is necessary to initialise the IC as following step.

A. Initialization

Press and hold the (→•←) **normalization button** on the remote control handset and press the (P▲) **programme + button** on the TV set.
The IC will be initialised automatically to set the following data.

User control data

Colour	: Centre
Brightness	: Centre
Contrast	: Maximum
Sharpness	: Centre
Text. Bright	: Centre
Bass	: Centre
Treble	: Centre
Balance	: Centre
Volume	: Step 12

B. Service Mode

1. To enter the service mode, press and hold the (F▭) **Function button** on the remote control handset and press the (P▲)**programme + button** on the TV set.
   The following OSD appears on the screen.

ADJUST	DATA
System	+000
SCREEN	VOL
CPU MK2	1.0

2. Select desired service item by using the (F▭) **Function button** on the remote control handset.
3. Change date by using the (◢+)**Level + or** (◢-)- **button**.
4. To return to TV mode press the (▭-▭)**Recall button** on the remote control handset.

Service mode description

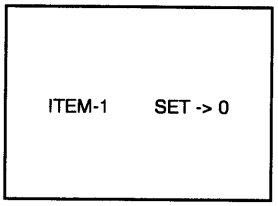
SCREEN: For screen adjustment
To make one horizontal scanning line.

This TV set allows you to set up the following special functions.

■ Maximum volume setting and prohibition of presetting

ITEM-1
Sets the current volume as the maximum volume level and prohibition of presetting.

SET→ 0	NO
SET→ 1	YES



■ Start up programme position

ITEM-2
Presets the programme position when the set is switched on.

SET -> 0	Last programme position start
SET -> 1	Programme position "1" start
SET -> 2	Programme position "2" start
SET -> 3	Programme position "3" start
SET -> 4	Programme position "4" start
SET -> 5	Programme position "5" start
SET -> 6	Programme position "6" start
SET -> 7	Programme position "7" start
SET -> 8	Programme position "8" start
SET -> 9	"AV1" start

SETTING PROCEDURE

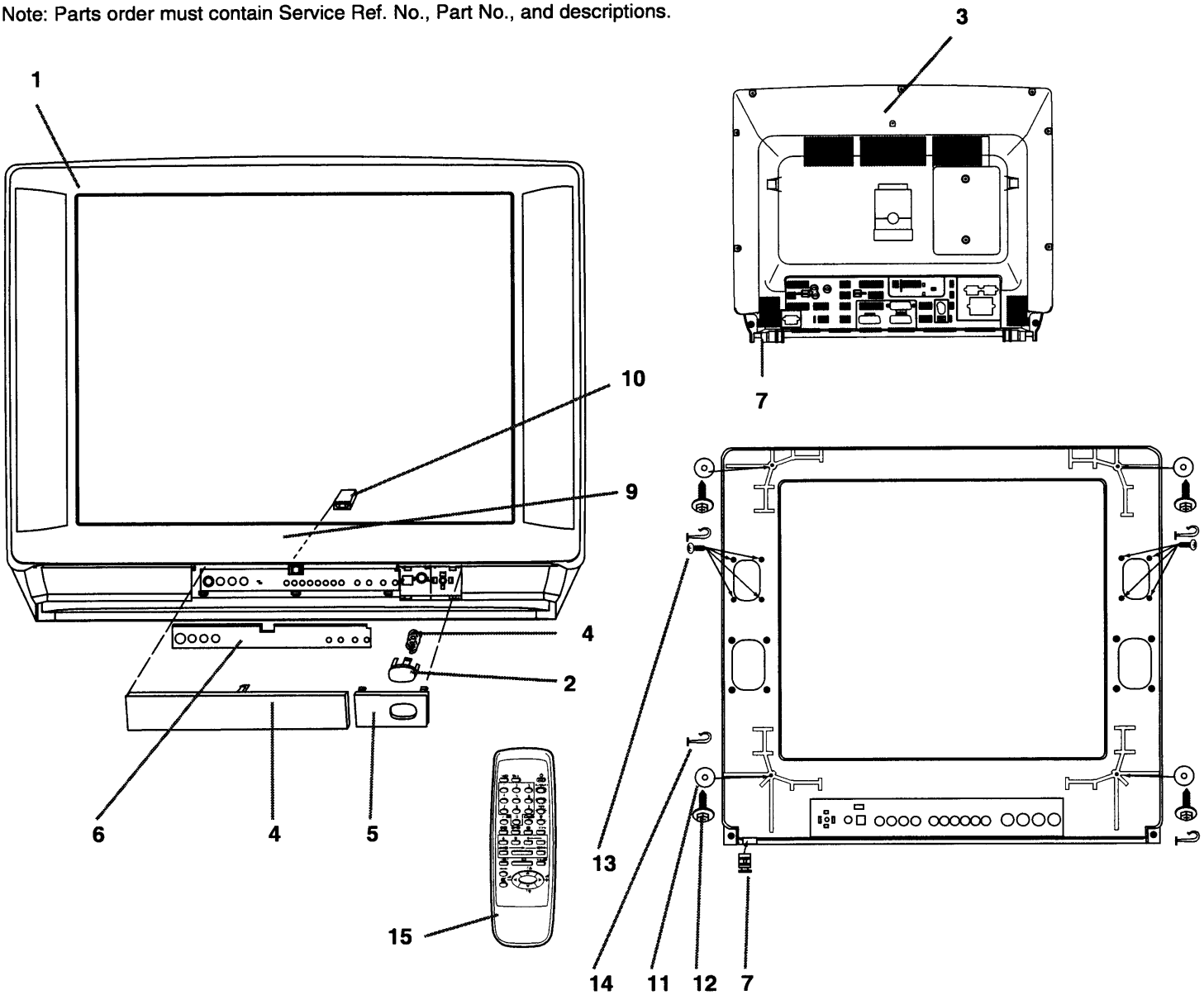
1. Press and hold the **button** on the **Remote control handset** and then press the **P▲ button** on the **TV set.**
2. To select the "Item" number, press the **button** on the **remote control handset.**
3. To select the "Set" number,press the + or - **button** repeatedly.
4. To return to the normal TV mode, press the **button.**

✎ The setting conditions of all items can be confirmed.
✎ Special functions are not cancelled if the TV set is switched off or the mains disconnected.

SERVICE REF. NO. CE21DN3-B-01

CABINET PARTS LIST

Note: Parts order must contain Service Ref. No., Part No., and descriptions.



Ref. No.	Part No.	Description
CABINET PARTS		
1	610 273 1897	ASSY,CABINET FR-F3JA-A
2	610 261 6057	BUTTON POWER-F3SCM
3	610 272 2192	CABINET BACK-F3JLV-A
4	610 267 2244	DOOR-F3JAV
5	610 261 6132	DEC BOARD-F3SCM
6	610 261 7726	DEC CONTROL SHEET-F3SCM
7	610 253 2449	HOLDER AC CORD-GBR-D4VA
8	610 261 3032	SPRING-E7GC
9	645 003 9256	BADGE,SANYO*46.2X13.5L45
10	610 104 2505	LATCH PUSH,7.9X6.9BK
11	610 224 5721	SPACER CUSHION-B3MY
12	412 009 3003	CRT SCREW 6 X 30
13	411 076 1400	SCREW TPG 4 X 14
14	610 265 4202	HOLDER DEGAUSS COIL

Ref. No.	Part No.	Description
ACCESSORIES		
15	JXMCA	RC TRANSMITTER
	610 271 4302	INSTRUCTIONS MANUAL-F3JMV
	645 000 6708	BATTERY,MANGAN,COMPOSITE

CHASSIS ELECTRICAL PARTS LIST

⚠

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a ⚠ mark in this parts list and the circuit diagram show compone nts whose value have special significance to product safety. It is particularly recommended that only parts specified on the following parts list be used for components replacement pointed out by the mark.

Note: Parts order must contain Service Ref. No., Part No., and descriptions.

Ref. No.	Part No.	Description

Read description in the Capacitor and Resistor as follows:

CAPACITOR
CERAMIC 100P K 50V

- CERAMIC — Material
- 100P — Rated value: P=pico farad, U=Micro farad
- K — Tolerance Symbols:

Less than 10PF

A: Not specified	B: ±0.1PF	C: ±0.25PF
D: ±0.5PF	F: ±1PF	G: ±2PF
R: ±0.25-0PF	S: ±0-0.25PF	E: +0-1PF

More than 10PF

A: Not specified	B: ±0.1%	C: ±0.25%
D: ±0.5%	F: ±1%	G: ±2%
H: ±3%	J: ±5%	K: ±10%
L: ±15%	M: ±20%	N: ±30%
P: +100-0%	Q: +30-10%	T: +50-10%
U: +75-10%	V: +20-10%	W: +100-10%
X: +40-20%	Y: +150-10%	Z: +80-20%

- 50V — Rated Voltage

Material:

CERAMIC..... Ceramic
MT-PAPER..... Metallized Paper
POLYESTER..... Polyester
MT-POLYEST.... Metallized Polyester
POLYPRO..... Polypropylene
MT-POLYPRO.... Metallized Polypropylene
COMPO FILM..... Composite film
MT-COMPO..... Metallized Composite
STYRENE..... Styrene
TA-SOLID..... Tantalum Solid
AL-SOLID..... Aluminium Solid
ELECT..... Electrolytic
NP-ELECT..... Non-polarised Electrolytic
OS-SOLID..... Aluminium Solid with Organic Semiconductive Electrolytic
DL-ELECT..... Double Layered Electrolytic

RESISTOR
CARBON 4.7K J A 1/4W

- CARBON — Material
- 4.7K — Rated value, ohms: K: 1,000, M: 1,000,000
- J — Tolerance Symbols:
  A: ±0.05% B: ±0.1% C: ±0.25% D: ±0.5%
  F: ±1% G: ±2% J: ±5% K: ±10%
  M: ±20% P: +5-15%
- A — Performance Symbols:
  A: General B: Non flammable Z: Low noise
  Other: Temperature coefficient
- 1/4W — Rated Wattage

Material:

CARBON..... Carbon
MT-FILM..... Metal Film
OXIDE-MT..... Oxide Metal Film
SOLID..... Composition
MT-GLAZE..... Metal Glaze
WIRE WOUND... Wire Wound
CERAMIC RES.. Ceramic
FUSIBLE RES.... Fusible

Ref. No.	Part No.	Description

OUT OF CIRCUIT BOARD

PICTURE TUBE

⚠ Q901	414 007 9001	CRT A51EBV13X09

COIL

⚠	645 002 5624	DEGAUSSING COIL 21INCH

MISCELLANEOUS

SP901	610 232 3986	SPEAKER
SP902	610 232 3986	SPEAKER
⚠ W901	645 011 8838	3P AC CORD + 2P HOUSE @ 2
W902	610 024 2531	GROUNDING CONNECTOR

610 260 0667 ASSY,PWB,CRT F2RC 1AA0B10E24500

TRANSISTOR

Q2601	405 041 6507	TR 2SC2621-D-RA
	405 041 6705	TR 2SC2621-E-RA
	405 066 9903	TR 2SC2688(1)-K
	405 067 0008	TR 2SC2688(1)-L
	405 067 0107	TR 2SC2688(1)-M
Q2611	405 041 6507	TR 2SC2621-D-RA
	405 041 6705	TR 2SC2621-E-RA
	405 066 9903	TR 2SC2688(1)-K
	405 067 0008	TR 2SC2688(1)-L
	405 067 0107	TR 2SC2688(1)-M
Q2621	405 041 6507	TR 2SC2621-D-RA
	405 041 6705	TR 2SC2621-E-RA
	405 066 9903	TR 2SC2688(1)-K
	405 067 0008	TR 2SC2688(1)-L
	405 067 0107	TR 2SC2688(1)-M
Q2640	406 007 1901	TR JC556A
	406 007 1802	TR JC556B
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP
	405 028 7909	TR 2SA608-G-CTV-NP
Q2651	406 007 1901	TR JC556A
	406 007 1802	TR JC556B
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP
	405 028 7909	TR 2SA608-G-CTV-NP

CAPACITOR

C2601	403 074 5702	CERAMIC	560P K	50V
C2611	403 074 5702	CERAMIC	560P K	50V
C2621	403 074 5702	CERAMIC	560P K	50V
C2631	403 077 2708	CERAMIC	1000P P	2K
C2635	403 055 8401	ELECT	22U M	250V
	403 260 0405	ELECT	22U M	250V
C2651	403 201 5001	ELECT	330U M	16V

Ref. No.	Part No.	Deacription
RESISTOR		
R2601	401 018 2800	CARBON 330 JA 1/4W
R2602	401 019 1901	CARBON 3.9K JA 1/4W
R2603	401 012 5708	CARBON 1K JA 1/4W
R2604	401 065 4604	OXIDE-MT 12K JA 2W
R2605	401 009 6602	CARBON 3.3K JA 1/2W
R2611	401 018 2800	CARBON 330 JA 1/4W
R2612	401 019 1901	CARBON 3.9K JA 1/4W
R2613	401 016 3809	CARBON 2.2K JA 1/4W
R2614	401 065 4604	OXIDE-MT 12K JA 2W
R2615-B	401 009 6602	CARBON 3.3K JA 1/2W
R2621	401 018 2800	CARBON 330 JA 1/4W
R2622	401 019 1901	CARBON 3.9K JA 1/4W
R2623	401 015 2704	CARBON 1.8K JA 1/4W
R2624	401 065 4604	OXIDE-MT 12K JA 2W
R2625-B	401 009 6602	CARBON 3.3K JA 1/2W
R2627	401 020 0801	CARBON 470 JA 1/4W
R2641	401 020 2003	CARBON 4.7K JA 1/4W
R2642	401 018 3807	CARBON 3.3K JA 1/4W
R2644	401 017 0807	CARBON 270 JA 1/4W
R2652	401 012 7009	CARBON 10K JA 1/4W
R2653	401 012 7009	CARBON 10K JA 1/4W
VARIABLE RESISTOR		
VR2601	645 003 5722	VR,SEMI,4.7K N
VR2602	645 003 5647	VR,SEMI,1K N
VR2611	645 003 5722	VR,SEMI,4.7K N
VR2612	645 003 5647	VR,SEMI,1K N
VR2621	645 003 5722	VR,SEMI,4.7K N
COIL		
L2601	645 008 0012	INDUCTOR,330U K
L2611	645 008 0012	INDUCTOR,330U K
L2621	645 008 0012	INDUCTOR,330U K
DIODE		
D2601	407 013 1206	DIODE 1S1555
D2611	407 013 1206	DIODE 1S1555
D2621	407 013 1206	DIODE 1S1555
D2651	407 013 1206	DIODE 1S1555
MISCELLANEOUS		
K26M	645 008 4058	TERMINAL,PLUG
K26P	645 004 2911	PLUG,5P
K26Q	645 004 2898	PLUG,3P
⚠ K2601-B	610 233 7990	CRT SOCKET

610 270 2330 ASSY,PWB,SIF F3JM 1AA0B10E4120A

Ref. No.	Part No.	Deacription
TRANSISTOR		
Q3811	405 014 4519	TR 2SC2412KT146/R
INTEGRATED CIRCUIT		
IC3801	409 310 8407	IC LA7577N
CAPACITOR		
C3805	403 023 4414	CERAMIC 330P J 50V
C3806	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C3807	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C3808	403 049 4204	ELECT 10U M 50V
C3809	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C3810	403 051 0607	ELECT 4.7U M 50V
C3811	403 018 0503	CERAMIC 22P J 50V
C3812	403 048 6308	ELECT 0.47U M 50V
C3813	403 074 6610	CERAMIC 560P K 50V
C3814	403 069 1712	CERAMIC 1000P K 50V
C3815	403 069 9510	CERAMIC CHIP 0.01 Z 50V
RESISTOR		
R3811	401 038 7512	MT-GLAZE 56 JA 1/10W
R3812	401 037 5618	MT-GLAZE 10K JA 1/10W
R3815	401 037 5410	MT-GLAZE 1K JA 1/10W
R3816	401 038 3514	MT-GLAZE 330 JA 1/10W
R3817	401 038 6317	MT-GLAZE 470 JA 1/10W
R3818	401 037 6714	MT-GLAZE 1.2K JA 1/10W
TRANSFORMER		
T3801	610 037 4539	S COIL
MISCELLANEOUS		
K38H1	645 027 0185	PLUG,4P
K38H2	645 027 0185	PLUG,4P
X3801A	421 006 9406	SAW F TSB5391

610 270 2347 ASSY,PWB,AUDIO F3JM 1AA0B10E4120B

Ref. No.	Part No.	Deacription
TRANSISTOR		
Q1252	405 014 4519	TR 2SC2412KT146/R
Q1253	405 014 4519	TR 2SC2412KT146/R
Q3452	405 014 4519	TR 2SC2412KT146/R
Q3453	405 014 4519	TR 2SC2412KT146/R
Q3501	405 014 4519	TR 2SC2412KT146/R
Q3502	405 014 4519	TR 2SC2412KT146/R
Q3503	405 014 4519	TR 2SC2412KT146/R
INTEGRATED CIRCUIT		
IC1251	409 009 2501	IC HD14052BP
IC3451	409 418 2901	IC TDA9875/V1
IC3500	409 367 2809	IC BA178M09T
IC3501	409 398 9204	IC MM1369AD
CAPACITOR		
C1251	403 043 9106	ELECT 47U M 16V
C3451	403 046 9905	ELECT 4.7U M 25V
C3452	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C3453	403 026 2813	CERAMIC 47P J 50V
C3454	403 068 0419	CERAMIC 0.1U Z 25V
C3455	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
C3458	403 026 2813	CERAMIC 47P J 50V
C3461	403 049 0008	ELECT 1U M 50V
C3462	403 012 6818	CERAMIC 15P J 50V
C3463	403 012 6818	CERAMIC 15P J 50V
C3465	403 073 1210	CERAMIC 0.033U K 50V
C3466	403 279 4312	CERAMIC 0.33U K 16V
C3468	403 049 0008	ELECT 1U M 50V
C3469	403 049 0008	ELECT 1U M 50V
C3473	403 279 4312	CERAMIC 0.33U K 16V
C3474	403 279 4312	CERAMIC 0.33U K 16V
C3475	403 039 2104	ELECT 47U M 6.3V
C3476	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C3477	403 039 2104	ELECT 47U M 6.3V
C3478	403 018 7413	CERAMIC 220P J 50V
C3479	403 018 7413	CERAMIC 220P J 50V
C3480	403 039 2104	ELECT 47U M 6.3V
C3481	403 039 2104	ELECT 47U M 6.3V
C3482	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C3483	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C3484	403 039 2104	ELECT 47U M 6.3V
C3485	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C3486	403 049 0008	ELECT 1U M 50V
C3487	403 049 0008	ELECT 1U M 50V
C3492	403 069 5611	CERAMIC 0.01U K 50V
C3493	403 069 5611	CERAMIC 0.01U K 50V
C3500	403 043 9106	ELECT 47U M 16V
C3501	403 049 4204	ELECT 10U M 50V
C3502	403 075 0716	CERAMIC 6800P K 50V
C3503	403 010 1112	CERAMIC 1000P J 50V
C3504	403 192 5915	CERAMIC 0.1U K 25V
C3505	403 043 9106	ELECT 47U M 16V
C3506	403 049 9803	ELECT 2.2U M 50V
C3507	403 069 5611	CERAMIC 0.01U K 50V
C3508	403 069 5611	CERAMIC 0.01U K 50V
C3509	403 069 5611	CERAMIC 0.01U K 50V

Ref. No.	Part No.	Deacription
C3510	403 069 5611	CERAMIC 0.01U K 50V
C3511	403 010 1112	CERAMIC 1000P J 50V
C3512	403 192 5915	CERAMIC 0.1U K 25V
C3513	403 075 0716	CERAMIC 6800P K 50V
C3514	403 049 4204	ELECT 10U M 50V
C3515	403 049 9803	ELECT 2.2U M 50V
C3516	403 049 4204	ELECT 10U M 50V
C3517	403 269 5916	CERAMIC 0.22U K 16V
C3518	403 043 9106	ELECT 47U M 16V
C3520	403 043 9106	ELECT 47U M 16V
C3521	403 279 4312	CERAMIC 0.33U K 16V
C3522	403 279 4312	CERAMIC 0.33U K 16V
RESISTOR		
R1251	401 038 9318	MT-GLAZE 68K JA 1/10W
R1252	401 038 9318	MT-GLAZE 68K JA 1/10W
R1253	401 038 9318	MT-GLAZE 68K JA 1/10W
R1254	401 038 9318	MT-GLAZE 68K JA 1/10W
R1255	401 038 9318	MT-GLAZE 68K JA 1/10W
R1256	401 038 9318	MT-GLAZE 68K JA 1/10W
R1257	401 038 9318	MT-GLAZE 68K JA 1/10W
R1258	401 038 9318	MT-GLAZE 68K JA 1/10W
R1261	401 038 6317	MT-GLAZE 470 JA 1/10W
R1262	401 038 0711	MT-GLAZE 2.2K JA 1/10W
R1263	401 038 6317	MT-GLAZE 470 JA 1/10W
R1264	401 038 0711	MT-GLAZE 2.2K JA 1/10W
R3451	401 037 5212	MT-GLAZE 100 JA 1/10W
R3452	401 037 5212	MT-GLAZE 100 JA 1/10W
R3453	401 037 5618	MT-GLAZE 10K JA 1/10W
R3454	401 037 5212	MT-GLAZE 100 JA 1/10W
R3455	401 037 5618	MT-GLAZE 10K JA 1/10W
R3456	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
R3459	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
R3461	401 038 5310	MT-GLAZE 39K JA 1/10W
R3462	401 037 5618	MT-GLAZE 10K JA 1/10W
R3463	401 038 0216	MT-GLAZE 20K JA 1/10W
R3464	401 037 5212	MT-GLAZE 100 JA 1/10W
R3465	401 037 5618	MT-GLAZE 10K JA 1/10W
R3466	401 037 5410	MT-GLAZE 1K JA 1/10W
R3467	401 038 2111	MT-GLAZE 2.7K JA 1/10W
R3468	401 037 5410	MT-GLAZE 1K JA 1/10W
R3469	401 038 2111	MT-GLAZE 2.7K JA 1/10W
R3471	401 038 2012	MT-GLAZE 270 JA 1/10W
R3472	401 038 2012	MT-GLAZE 270 JA 1/10W
R3473	401 038 6317	MT-GLAZE 470 JA 1/10W
R3474	401 038 0711	MT-GLAZE 2.2K JA 1/10W
R3475	401 038 6317	MT-GLAZE 470 JA 1/10W
R3476	401 038 0711	MT-GLAZE 2.2K JA 1/10W
R3477	401 038 5310	MT-GLAZE 39K JA 1/10W
R3478	401 038 5310	MT-GLAZE 39K JA 1/10W
R3479	401 037 8015	MT-GLAZE 15K JA 1/10W
R3480	401 037 8015	MT-GLAZE 15K JA 1/10W
R3501	401 180 0416	MT-GLAZE 7.5K FA 1/10W
R3502	401 037 5212	MT-GLAZE 100 JA 1/10W
R3503	401 037 5410	MT-GLAZE 1K JA 1/10W
R3504	401 037 5410	MT-GLAZE 1K JA 1/10W
R3505	401 039 0512	MT-GLAZE 82K JA 1/10W
R3506	401 037 9319	MT-GLAZE 18K JA 1/10W
R3507	401 038 0711	MT-GLAZE 2.2K JA 1/10W
R3508	401 037 5410	MT-GLAZE 1K JA 1/10W
R3509	401 038 9219	MT-GLAZE 6.8K JA 1/10W
R3510	401 038 6416	MT-GLAZE 4.7K JA 1/10W
R3511	401 038 0919	MT-GLAZE 220K JA 1/10W
R3512	401 038 7819	MT-GLAZE 56K JA 1/10W
R3513	401 038 7819	MT-GLAZE 56K JA 1/10W
R3514	401 038 5112	MT-GLAZE 3.9K JA 1/10W
R3515	401 037 5410	MT-GLAZE 1K JA 1/10W
R3516	401 038 0711	MT-GLAZE 2.2K JA 1/10W
R3517	401 037 5410	MT-GLAZE 1K JA 1/10W
R3518	401 038 0711	MT-GLAZE 2.2K JA 1/10W

Ref. No.	Part No.	Deacription
COIL		
L3450	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
L3451	645 008 2221	INDUCTOR,2.2U K
L3452	645 008 2221	INDUCTOR,2.2U K
L3453	645 008 2368	INDUCTOR,3.3U K
L3455	645 008 2221	INDUCTOR,2.2U K
L3456	645 008 2221	INDUCTOR,2.2U K
L3457	645 008 2221	INDUCTOR,2.2U K
L3459	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
DIODE		
D3451	407 169 7919	VARACTOR DI BBY31
MISCELLANEOUS		
J1251	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J3459	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J3463	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J3465	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J3469	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J3474	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J3486	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J3489	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J3501	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
K12B	645 008 7288	HOUSING PLUG 5P
K34A	645 027 0192	PLUG,10P
K34B	645 027 0192	PLUG,10P
K34C	645 027 0178	PLUG,3P
X3451	645 024 7484	OSC,CRYSTAL 24.576MHZ

610 270 2293 ASSY,PWB,MAIN F3JMV 1AA0B10E40900

TRANSISTOR		
Q001	406 007 2106	TR JC546A
Q1001	406 007 1901	TR JC556A
Q1002	406 007 2106	TR JC546A
Q1003	406 007 2106	TR JC546A
Q1004	406 007 2106	TR JC546A
Q1005	406 007 2106	TR JC546A
Q1041	406 007 2106	TR JC546A
Q1042	406 007 1901	TR JC556A
Q1043	406 007 2106	TR JC546A
Q1201	406 007 2106	TR JC546A
Q1202	406 007 2106	TR JC546A
Q1203	406 007 2106	TR JC546A
Q121	406 007 2106	TR JC546A
Q151	406 007 1901	TR JC556A
Q152	406 007 2106	TR JC546A
Q153	406 007 1901	TR JC556A
Q154	406 007 1901	TR JC556A
Q171	406 007 2106	TR JC546A
Q2001	406 007 2106	TR JC546A
Q201	406 007 2106	TR JC546A
Q202	406 007 2106	TR JC546A
Q431	T2SC2274-EAA	TR 2SC2274-E
Q432	405 022 6809	TR 2SD1651-CTV-YB
Q432-1	610 251 0683	H HEAT SINK E7PC
Q501	406 007 2106	TR JC546A
Q611	406 007 1901	TR JC556A
Q612	405 058 0208	TR 2SC3807-R-CTV-YA
Q613	405 018 9203	TR 2SC3895-T-CTV-YB
Q613-1	610 251 0683	H HEAT SINK E7PC
Q641	406 007 2106	TR JC546A
Q681	405 059 9804	TR 2SD1913-Q-RA
Q682	406 007 1901	TR JC556A
Q801	405 118 4217	TR PH2369
Q835	406 007 2106	TR JC546A
Q861	406 007 1901	TR JC556A

Ref. No.	Part No.	Deacription
Q871	406 007 2106	TR JC546A
Q872	406 007 2106	TR JC546A
Q873	406 007 2106	TR JC546A
Q874	406 007 2106	TR JC546A
INTEGRATED CIRCUIT		
IC001	409 301 4906	IC TDA7263M
IC001-1	610 251 4186	AUDIO HEATSINK ASSY E7PC
IC1201	409 018 7603	IC LA7016
IC1202	409 120 3401	IC LA7221
IC201	409 380 8703	IC TDA8361/N5
IC271	409 404 0201	IC U3665M
IC501	409 183 5008	IC LA7832
IC501-1	610 251 8153	VERTICAL RADIATOR-E7PC
IC651	409 365 2900	IC BA178M12T
IC652	409 365 2801	IC BA178M08T
IC653	409 241 5407	IC BA178M05T
IC801	410 305 1907	IC SAA5296ZP/071
IC802	409 333 3700	IC 24LC02B/P
CAPACITOR		
C001A	403 068 0419	CERAMIC 0.1U Z 25V
C002	403 070 9813	CHIP CERAMIC 0.015U K 50V
C003A	403 068 0419	CERAMIC 0.1U Z 25V
C004	403 070 9813	CHIP CERAMIC 0.015U K 50V
C005	403 046 3507	ELECT 33U M 25V
C006	403 046 3507	ELECT 33U M 25V
C007	403 237 7941	MT-COMPO 0.22U J 50V
C008	403 237 7941	MT-COMPO 0.22U J 50V
C009	403 237 7941	MT-COMPO 0.22U J 50V
C010	403 237 7941	MT-COMPO 0.22U J 50V
C011	403 042 4805	ELECT 1000U M 16V
C012	403 042 4805	ELECT 1000U M 16V
C013	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C014	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C015	403 044 9501	ELECT 100U M 25V
C016	403 085 4008	NP-ELECT 10U M 16V
C017	403 085 4008	NP-ELECT 10U M 16V
C021	403 052 8503	ELECT 1000U M 35V
C023	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C024	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C1001	403 069 1712	CERAMIC 1000P K 50V
C1002	403 049 4204	ELECT 10U M 50V
C1003	403 009 5718	CERAMIC 100P J 50V
C1004	403 130 3119	CERAMIC 0.047U K 50V
C1005	403 069 1712	CERAMIC 1000P K 50V
C1006	403 049 4204	ELECT 10U M 50V
C1007	403 009 5718	CERAMIC 100P J 50V
C1008	403 130 3119	CERAMIC 0.047U K 50V
C1009	403 049 4204	ELECT 10U M 50V
C101	403 194 4609	ELECT 470U M 16V
C102	403 043 9106	ELECT 47U M 16V
C1021	403 069 1712	CERAMIC 1000P K 50V
C1022	403 049 4204	ELECT 10U M 50V
C1023	403 009 5718	CERAMIC 100P J 50V
C1024	403 041 9405	ELECT 10U M 16V
C1025	403 069 1712	CERAMIC 1000P K 50V
C1026	403 049 4204	ELECT 10U M 50V
C1027	403 009 5718	CERAMIC 100P J 50V
C1028	403 041 9405	ELECT 10U M 16V
C1029	403 049 4204	ELECT 10U M 50V
C1031	403 033 4510	CERAMIC 82P J 50V
C104B	403 043 9106	ELECT 47U M 16V
C1041	403 049 4204	ELECT 10U M 50V
C106	403 049 0008	ELECT 1U M 50V
C106A	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C107A	403 069 1712	CERAMIC 1000P K 50V
C108	403 027 1211	CERAMIC 5P J 50V
C109	403 027 1211	CERAMIC 5P J 50V
C110	403 033 4510	CERAMIC 82P J 50V

Ref. No.	Part No.	Deacription
C1101	403 049 4204	ELECT 10U M 50V
C1102	403 009 5718	CERAMIC 100P J 50V
C1103	403 069 1712	CERAMIC 1000P K 50V
C1104	403 049 4204	ELECT 10U M 50V
C1105	403 009 5718	CERAMIC 100P J 50V
C1106	403 069 1712	CERAMIC 1000P K 50V
C1107	403 049 4204	ELECT 10U M 50V
C1108	403 033 4510	CERAMIC 82P J 50V
C1109	403 008 7416	CERAMIC 10P D 50V
C114	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
C117	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
C1200	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C1201	403 049 4204	ELECT 10U M 50V
C1202	403 049 4204	ELECT 10U M 50V
C1203	403 069 8305	CERAMIC 0.01U Z 50V
C121	403 068 0419	CERAMIC 0.1U Z 25V
C131	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
C132	403 069 1712	CERAMIC 1000P K 50V
C133	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C134	403 049 9803	ELECT 2.2U M 50V
C135	403 068 0419	CERAMIC 0.1U Z 25V
C136	403 194 4609	ELECT 470U M 16V
C137	403 068 0419	CERAMIC 0.1U Z 25V
C138	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C141	403 028 4419	CERAMIC 56P J 50V
C142	403 068 0419	CERAMIC 0.1U Z 25V
C143	403 027 1211	CERAMIC 5P J 50V
C146	403 010 8507	CERAMIC 12P J 50V
C151	403 022 8215	CERAMIC 33P J 50V
C152	403 028 4112	CERAMIC 56P J 50V
C162	403 068 0419	CERAMIC 0.1U Z 25V
C171	403 237 8057	MT-COMPO 0.1U J 50V
C1901	403 069 1712	CERAMIC 1000P K 50V
C200	403 068 0419	CERAMIC 0.1U Z 25V
C2001	403 068 0419	CERAMIC 0.1U Z 25V
C2002	403 068 0419	CERAMIC 0.1U Z 25V
C2003	403 068 0419	CERAMIC 0.1U Z 25V
C201	403 014 3409	CERAMIC 18P J 50V
C202	403 237 8057	MT-COMPO 0.1U J 50V
C203	403 073 9117	CERAMIC 4700P K 50V
C204	403 068 0419	CERAMIC 0.1U Z 25V
C205	403 068 0419	CERAMIC 0.1U Z 25V
C206	403 068 0419	CERAMIC 0.1U Z 25V
C207	403 068 0419	CERAMIC 0.1U Z 25V
C208	403 068 0419	CERAMIC 0.1U Z 25V
C209	403 069 1712	CERAMIC 1000P K 50V
C212	403 049 9803	ELECT 2.2U M 50V
C215	403 067 7895	MT-COMPO 0.47 J 50V
C222	404 045 6605	NP-ELECT 2.2U M 50V
C226	403 138 1602	ELECT 1U M 100V
C231	403 068 0419	CERAMIC 0.1U Z 25V
C232	403 033 4510	CERAMIC 82P J 50V
C233	403 068 0419	CERAMIC 0.1U Z 25V
C234	403 033 4510	CERAMIC 82P J 50V
C235	403 008 7416	CERAMIC 10P D 50V
C271	403 069 1712	CERAMIC 1000P K 50V
C272	403 069 1712	CERAMIC 1000P K 50V
C273	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C274	403 049 4204	ELECT 10U M 50V
C351	403 237 8057	MT-COMPO 0.1U J 50V
C352	403 179 1015	POLYESTER 0.047U J 50V
C353	403 073 9117	CERAMIC 4700P K 50V
C354	403 049 0008	ELECT 1U M 50V
C361	403 072 5615	CERAMIC 2700P K 50V
C362	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C363	403 042 2405	ELECT 100U M 16V
⚠ C421	404 064 4200	MT-POLYPRO 8200P J 1.5K
C425	403 165 7321	CERAMIC 330P K 3K
C430	403 075 9709	CERAMIC 1800P K 500V

Ref. No.	Part No.	Deacription
C432	403 075 7101	CERAMIC 1000P K 500V
C433	403 076 3102	CERAMIC 3900P K 500V
C434	403 229 1207	ELECT 47U M 35V
C437	403 066 6106	MT-POLYEST 0.47U J 250V
C438	403 179 2715	POLYESTER 2200P J 50V
⚠ C441	403 216 7601	POLYPRO 0.36U J 200V
C445	403 049 4204	ELECT 10U M 50V
C481	403 076 1405	CERAMIC 2700P K 500V
C482	403 159 7409	MT-POLYEST 0.1U K 250V
C501	403 054 1502	ELECT 470U M 35V
C502	403 217 1103	ELECT 220U M 35V
C503	403 024 2112	CERAMIC 39P J 50V
C504	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C505	403 075 7101	CERAMIC 1000P K 500V
C506	403 183 7901	MT-POLYEST 0.1U K 100V
C511	403 188 1201	MT-POLYEST 0.15U K 100V
C512	403 190 4702	ELECT 1000U M 25V
C513	403 049 4204	ELECT 10U M 50V
C514	403 049 4204	ELECT 10U M 50V
C600	403 076 4000	CERAMIC 4700P K 500V
⚠ C601	404 060 7205	MT-POLYEST 0.1U M 250V
⚠ C602	404 060 7205	MT-POLYEST 0.1U M 250V
C603	403 076 7130	CERAMIC 1000P M 1K
C604	403 076 7130	CERAMIC 1000P M 1K
C605	403 076 7130	CERAMIC 1000P M 1K
C606	403 076 7130	CERAMIC 1000P M 1K
C607	404 047 1707	ELECT 220U M 400V
C613	403 179 1213	POLYESTER 4700P J 50V
C614	403 237 8057	MT-COMPO 0.1U J 50V
C615	403 179 3217	POLYESTER 0.015U J 50V
C616	403 165 8427	CERAMIC 680P K 2K
C617	403 179 1619	POLYESTER 0.033U K 50V
⚠ C631	404 060 6505	CERAMIC 2200P M 400V
⚠ C632	404 044 2806	CERAMIC 470P K 400V
C640	403 069 8305	CERAMIC 0.01U Z 50V
C641	403 165 9335	CERAMIC 680P K 1K
C642A	404 042 4505	ELECT 220U M 160V
C643	403 148 2002	ELECT 470U M 35V
C644	403 148 0701	ELECT 2200U M 25V
C645	403 158 1309	ELECT 2200U M 35V
C651	403 148 0305	ELECT 470U M 16V
C652	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C653	403 043 9106	ELECT 47U M 16V
C655	403 126 4400	ELECT 100U M 10V
C661	403 051 0607	ELECT 4.7U M 50V
C681	403 190 4702	ELECT 1000U M 25V
C682	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C683	403 147 9606	ELECT 1000U M 10V
C684	403 049 9803	ELECT 2.2U M 50V
C802	403 237 8057	MT-COMPO 0.1U J 50V
C812	403 049 0008	ELECT 1U M 50V
C814	403 049 0008	ELECT 1U M 50V
C816	403 051 0607	ELECT 4.7U M 50V
C818	403 051 0607	ELECT 4.7U M 50V
C841	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C860	403 022 8215	CERAMIC 33P J 50V
C861	403 179 0810	POLYESTER 0.0056U J 5
C871	403 068 0419	CERAMIC 0.1U Z 25V
C872	403 043 9106	ELECT 47U M 16V
C873	403 018 0503	CERAMIC 22P J 50V
C874	403 018 0503	CERAMIC 22P J 50V
C875	403 068 0419	CERAMIC 0.1U Z 25V
C878	403 073 9117	CERAMIC 4700P K 50V
C879	403 068 0419	CERAMIC 0.1U Z 25V
C881	403 069 9510	CERAMIC CHIP 0.01 Z 50V
C882	403 049 4204	ELECT 10U M 50V
C883	403 018 0503	CERAMIC 22P J 50V
C884	403 018 0503	CERAMIC 22P J 50V

Ref. No.	Part No.	Deacription
RESISTOR		
R001	401 037 5410	MT-GLAZE 1K JA 1/10W
R002	401 037 9210	MT-GLAZE 1.8K JA 1/10W
R003	401 037 5410	MT-GLAZE 1K JA 1/10W
R004	401 037 9210	MT-GLAZE 1.8K JA 1/10W
R005	401 019 9640	CARBON 47 JA 1/4W
R006	401 014 4145	CARBON 1K5 JA 1/4W
R007	401 019 9640	CARBON 47 JA 1/4W
R008	401 014 4145	CARBON 1K5 JA 1/4W
R009	401 010 1514	CARBON 4.7 JA 1/2W
R010	401 010 1514	CARBON 4.7 JA 1/2W
R011	401 007 7641	CARBON 150 JA 1/2W
R012	401 007 7641	CARBON 150 JA 1/2W
R013	401 037 6714	MT-GLAZE 1.2K JA 1/10W
R014	401 016 2644	CARBON 220 JA 1/4W
R015	401 037 5410	MT-GLAZE 1K JA 1/10W
R016	401 038 6515	MT-GLAZE 47K JA 1/10W
R017	401 037 5618	MT-GLAZE 10K JA 1/10W
R100	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
R1001	401 038 7611	MT-GLAZE 560 JA 1/10W
R1002	401 038 0711	MT-GLAZE 2.2K JA 1/10W
R1003	401 038 7611	MT-GLAZE 560 JA 1/10W
R1004	401 038 0711	MT-GLAZE 2.2K JA 1/10W
R1005	401 027 6628	CARBON 75 JA 1/6W
R1006	401 038 5310	MT-GLAZE 39K JA 1/10W
R1007	401 038 3712	MT-GLAZE 33K JA 1/10W
R1008	401 027 6628	CARBON 75 JA 1/6W
R1009	401 027 6628	CARBON 75 JA 1/6W
R101	401 037 7810	MT-GLAZE 150 JA 1/10W
R1010	401 027 6628	CARBON 75 JA 1/6W
R1011	401 037 5212	MT-GLAZE 100 JA 1/10W
R1012	401 027 6628	CARBON 75 JA 1/6W
R1013	401 012 4543	CARBON 100 JA 1/4W
R1014	401 027 6628	CARBON 75 JA 1/6W
R1015	401 038 6416	MT-GLAZE 4.7K JA 1/10W
R1016	401 019 1040	CARBON 390 JA 1/4W
R1017	401 024 7430	CARBON 10K JA 1/6W
R1018	401 038 3514	MT-GLAZE 330 JA 1/10W
R1021	401 038 7611	MT-GLAZE 560 JA 1/10W
R1022	401 038 0711	MT-GLAZE 2.2K JA 1/10W
R1023	401 038 7611	MT-GLAZE 560 JA 1/10W
R1024	401 038 0711	MT-GLAZE 2.2K JA 1/10W
R1025	401 038 5310	MT-GLAZE 39K JA 1/10W
R1026	401 038 3712	MT-GLAZE 33K JA 1/10W
R1027	401 027 6628	CARBON 75 JA 1/6W
R1028	401 027 6628	CARBON 75 JA 1/6W
R1029	401 017 0847	CARBON 270 JA 1/4W
R1031	401 038 0612	MT-GLAZE 220 JA 1/10W
R1032	401 038 0612	MT-GLAZE 220 JA 1/10W
R1033	401 038 0612	MT-GLAZE 220 JA 1/10W
R1041	401 038 2210	MT-GLAZE 27K JA 1/10W
R1042	401 037 5618	MT-GLAZE 10K JA 1/10W
R1043	401 039 0314	MT-GLAZE 820 JA 1/10W
R1044	401 039 0314	MT-GLAZE 820 JA 1/10W
R1045	401 037 5410	MT-GLAZE 1K JA 1/10W
R1046	401 038 0711	MT-GLAZE 2.2K JA 1/10W
R1047	401 037 6714	MT-GLAZE 1.2K JA 1/10W
R1051	401 037 8114	MT-GLAZE 150K JA 1/10W
R1052	401 037 5717	MT-GLAZE 100K JA 1/10W
R1053	401 037 6714	MT-GLAZE 1.2K JA 1/10W
R1054	401 037 8114	MT-GLAZE 150K JA 1/10W
R1055	401 037 5717	MT-GLAZE 100K JA 1/10W
R1056	401 037 6714	MT-GLAZE 1.2K JA 1/10W
R108	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
R110	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
R1101	401 027 6628	CARBON 75 JA 1/6W
R1102	401 038 2012	MT-GLAZE 270 JA 1/10W
R1103	401 038 0711	MT-GLAZE 2.2K JA 1/10W
R1104	401 038 0711	MT-GLAZE 2.2K JA 1/10W

Ref. No.	Part No.	Deacription			Ref. No.	Part No.	Deacription		
R1105	401 037 5717	MT-GLAZE	100K	JA 1/10W	R217	401 016 4836	CARBON	22K	JA 1/4W
R1106	401 037 5717	MT-GLAZE	100K	JA 1/10W	R218	401 038 7819	MT-GLAZE	56K	JA 1/10W
R1111	401 037 5618	MT-GLAZE	10K	JA 1/10W	R223	401 015 4738	CARBON	180K	JA 1/4W
R1200	401 022 1935	CARBON	680	JA 1/4W	R224	401 024 7024	CARBON	1K	JA 1/6W
R1201	401 038 6515	MT-GLAZE	47K	JA 1/10W	R226	401 026 7428	CARBON	39K	JA 1/6W
R1202	401 038 6515	MT-GLAZE	47K	JA 1/10W	R227	401 012 7049	CARBON	10K	JA 1/4W
R1203	401 037 5618	MT-GLAZE	10K	JA 1/10W	R231	401 038 2012	MT-GLAZE	270	JA 1/10W
R1204	401 038 2210	MT-GLAZE	27K	JA 1/10W	R232	401 038 2012	MT-GLAZE	270	JA 1/10W
R1205	401 038 2210	MT-GLAZE	27K	JA 1/10W	R271	401 024 6720	CARBON	100	JA 1/6W
R1208	401 038 0810	MT-GLAZE	22K	JA 1/10W	R272	401 024 9028	CARBON	120	JA 1/6W
R1209	401 012 7049	CARBON	10K	JA 1/4W	R351	401 037 5212	MT-GLAZE	100	JA 1/10W
R121	401 020 2944	CARBON	47K	JA 1/4W	R352	401 037 5816	MT-GLAZE	1M	JA 1/10W
R131	401 038 0919	MT-GLAZE	220K	JA 1/10W	R353	401 038 0919	MT-GLAZE	220K	JA 1/10W
R132	401 038 0919	MT-GLAZE	220K	JA 1/10W	R356	401 037 5212	MT-GLAZE	100	JA 1/10W
R133	401 037 9111	MT-GLAZE	180	JA 1/10W	R357	401 037 5618	MT-GLAZE	10K	JA 1/10W
R134	401 038 9219	MT-GLAZE	6.8K	JA 1/10W	R361	401 038 5419	MT-GLAZE	390K	JA 1/10W
R135	401 038 6515	MT-GLAZE	47K	JA 1/10W	R363	401 038 0810	MT-GLAZE	22K	JA 1/10W
R136	401 037 5014	MT-GLAZE	0.000	ZA 1/10W	R364	401 037 5212	MT-GLAZE	100	JA 1/10W
R137	401 037 5212	MT-GLAZE	100	JA 1/10W	R365	401 038 6416	MT-GLAZE	4.7K	JA 1/10W
R138	401 038 7710	MT-GLAZE	5.6K	JA 1/10W	R431	401 038 3514	MT-GLAZE	330	JA 1/10W
R141	401 038 9219	MT-GLAZE	6.8K	JA 1/10W	R432	401 038 3514	MT-GLAZE	330	JA 1/10W
R150	401 024 7024	CARBON	1K	JA 1/6W	R433	401 010 3132	CARBON	470	JA 1/2W
R151	401 022 1935	CARBON	680	JA 1/4W	R434	401 067 9201	OXIDE-MT	390	JA 2W
R152	401 026 3925	CARBON	330	JA 1/6W	R435	402 076 0609	WIRE WOUND	8.2	KA 7W
R153	401 037 5410	MT-GLAZE	1K	JA 1/10W	R436	401 021 3049	CARBON	5.6K	JA 1/4W
R154	401 037 7919	MT-GLAZE	1.5K	JA 1/10W	R441	401 058 3706	OXIDE-MT	1K	JA 1W
R155	401 037 5410	MT-GLAZE	1K	JA 1/10W	R447	401 026 9927	CARBON	4K7	JA 1/6W
R156	401 037 5410	MT-GLAZE	1K	JA 1/10W	R448	401 009 5843	CARBON	330	JA 1/2W
R157	401 039 0918	MT-GLAZE	910	JA 1/10W	R451	401 064 5701	OXIDE-MT	1.8	JA 2W
R158	401 037 5410	MT-GLAZE	1K	JA 1/10W	R481	401 015 4738	CARBON	180K	JA 1/4W
R159	401 022 1935	CARBON	680	JA 1/4W	R482	401 027 2620	CARBON	5K6	JA 1/6W
R163	401 038 6515	MT-GLAZE	47K	JA 1/10W	R501	401 020 2053	CARBON	4.7K	JA 1/4W
R171	401 038 6317	MT-GLAZE	470	JA 1/10W	⚠ R502	402 051 8705	FUSIBLE RES	4.7	J- 1/2W
R172	401 016 2644	CARBON	220	JA 1/4W	R504	401 027 3023	CARBON	56K	JA 1/6W
R173	401 025 7429	CARBON	220	JA 1/6W	R505	401 024 7430	CARBON	10K	JA 1/6W
R1900	401 038 7819	MT-GLAZE	56K	JA 1/10W	R506	401 025 1625	CARBON	1K5	JA 1/6W
R1901	401 037 8015	MT-GLAZE	15K	JA 1/10W	R507	401 025 3827	CARBON	180	JA 1/6W
R1901A	401 037 5014	MT-GLAZE	0.000	ZA 1/10W	R508	401 025 7825	CARBON	2K2	JA 1/6W
R1902	401 039 0413	MT-GLAZE	8.2K	JA 1/10W	R509	401 057 9105	OXIDE-MT	1.2	JA 1W
R1902A	401 037 5014	MT-GLAZE	0.000	ZA 1/10W	R511	401 060 7402	OXIDE-MT	270	JA 1W
R1903	401 038 6416	MT-GLAZE	4.7K	JA 1/10W	R513	401 059 3903	OXIDE-MT	1.5K	JA 1W
R1903A	401 037 5014	MT-GLAZE	0.000	ZA 1/10W	R602	402 072 4403	WIRE WOUND	3.9	KA 7W
R1904	401 038 2111	MT-GLAZE	2.7K	JA 1/10W	R611	401 027 2620	CARBON	5K6	JA 1/6W
R1905	401 038 0711	MT-GLAZE	2.2K	JA 1/10W	R615	401 025 8228	CARBON	22K	JA 1/6W
R1906	401 037 5014	MT-GLAZE	0.000	ZA 1/10W	R617	401 024 9325	CARBON	1K2	JA 1/6W
R1907	401 037 5618	MT-GLAZE	10K	JA 1/10W	R619	401 016 1538	CARBON	22	JA 1/4W
R1908	401 038 3514	MT-GLAZE	330	JA 1/10W	R620	401 007 5815	CARBON	120K	JA 1/2W
R1909	401 037 7919	MT-GLAZE	1.5K	JA 1/10W	R621	401 007 5815	CARBON	120K	JA 1/2W
R1911	401 038 6317	MT-GLAZE	470	JA 1/10W	R622	401 014 5241	CARBON	15K	JA 1/4W
R1921	401 037 6615	MT-GLAZE	120	JA 1/10W	R623	401 025 7825	CARBON	2K2	JA 1/6W
R1922	401 038 5013	MT-GLAZE	390	JA 1/10W	R624	401 068 6902	OXIDE-MT	56	JA 2W
R1924	401 022 3147	CARBON	6K8	JA 1/4W	R625	401 067 8204	OXIDE-MT	39	JA 2W
R2001	401 038 2210	MT-GLAZE	27K	JA 1/10W	R626	401 016 3344	QARBON	2.2K	GA 1/4W
R2002	401 037 5618	MT-GLAZE	10K	JA 1/10W	⚠ R631	402 000 8602	SOLID	5.6M	KA 1/2W
R2004	401 037 7810	MT-GLAZE	150	JA 1/10W	⚠ R632	402 000 8602	SOLID	5.6M	KA 1/2W
R2005	401 024 9721	CARBON	12K	JA 1/6W	R641	401 012 8145	CARBON	100K	JA 1/4W
R201	401 039 0413	MT-GLAZE	8.2K	JA 1/10W	R642	401 026 9927	CARBON	4K7	JA 1/6W
R202	401 037 5717	MT-GLAZE	100K	JA 1/10W	R643	401 014 6149	CARBON	150K	JA 1/4W
R203	401 024 6720	CARBON	100	JA 1/6W	R644	401 010 4317	CARBON	47K	JA 1/2W
R204	401 024 6720	CARBON	100	JA 1/6W	R645	401 025 8228	CARBON	22K	JA 1/6W
R205	401 024 6720	CARBON	100	JA 1/6W	R646	402 067 3305	WIRE WOUND	4.7	KA 5W
R206	401 037 5212	MT-GLAZE	100	JA 1/10W	R652	401 065 1801	OXIDE-MT	12	JA 2W
R207	401 037 5212	MT-GLAZE	100	JA 1/10W	R653	401 067 8204	OXIDE-MT	39	JA 2W
R208	401 037 5212	MT-GLAZE	100	JA 1/10W	R655	401 065 5809	OXIDE-MT	15	JA 2W
R212	401 017 1844	CARBON	2K7	JA 1/4W	R661	401 065 8503	OXIDE-MT	15K	JA 2W
R213	401 038 7710	MT-GLAZE	5.6K	JA 1/10W	R681	401 008 1628	CARBON	1K8	JA 1/2W
R214	401 037 5212	MT-GLAZE	100	JA 1/10W	R682	401 069 1708	OXIDE-MT	68	JA 2W
R215	401 038 3712	MT-GLAZE	33K	JA 1/10W	R684	401 023 2842	CARBON	8K2	JA 1/4W
R216	401 016 4836	CARBON	22K	JA 1/4W	R685	401 025 8228	CARBON	22K	JA 1/6W

Ref. No.	Part No.	Deacription
R800	401 016 3849	CARBON 2.2K JA 1/4W
R801	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
R802	401 038 0711	MT-GLAZE 2.2K JA 1/10W
R803	401 037 9418	MT-GLAZE 180K JA 1/10W
R804	401 024 7430	CARBON 10K JA 1/6W
R806	401 024 7430	CARBON 10K JA 1/6W
R807	401 024 7430	CARBON 10K JA 1/6W
R811	401 016 3849	CARBON 2.2K JA 1/4W
R812	401 038 5112	MT-GLAZE 3.9K JA 1/10W
R813	401 018 4933	CARBON 33K JA 1/4W
R815	401 012 4543	CARBON 100 JA 1/4W
R816	401 038 9219	MT-GLAZE 6.8K JA 1/10W
R817	401 016 3849	CARBON 2.2K JA 1/4W
R818	401 038 9318	MT-GLAZE 68K JA 1/10W
R819	401 016 3849	CARBON 2.2K JA 1/4W
R820	401 037 5618	MT-GLAZE 10K JA 1/10W
R821	401 038 0810	MT-GLAZE 22K JA 1/10W
R822	401 038 6515	MT-GLAZE 47K JA 1/10W
R823	401 025 7825	CARBON 2K2 JA 1/6W
R824	401 038 6416	MT-GLAZE 4.7K JA 1/10W
R825	401 038 3613	MT-GLAZE 3.3K JA 1/10W
R831	401 037 5618	MT-GLAZE 10K JA 1/10W
R832	401 037 5618	MT-GLAZE 10K JA 1/10W
R838	401 037 8015	MT-GLAZE 15K JA 1/10W
R839	401 018 4933	CARBON 33K JA 1/4W
R840	401 020 0841	CARBON 470 JA 1/4W
R841	401 038 0810	MT-GLAZE 22K JA 1/10W
R842	401 020 2053	CARBON 4.7K JA 1/4W
R843	401 037 5618	MT-GLAZE 10K JA 1/10W
R844	401 038 5112	MT-GLAZE 3.9K JA 1/10W
R845	401 037 5618	MT-GLAZE 10K JA 1/10W
R846	401 038 6416	MT-GLAZE 4.7K JA 1/10W
R847	401 037 5618	MT-GLAZE 10K JA 1/10W
R848	401 038 6416	MT-GLAZE 4.7K JA 1/10W
R851	401 037 5410	MT-GLAZE 1K JA 1/10W
R852	401 037 5410	MT-GLAZE 1K JA 1/10W
R853	401 038 0810	MT-GLAZE 22K JA 1/10W
R861	401 038 2111	MT-GLAZE 2.7K JA 1/10W
R862	401 038 0810	MT-GLAZE 22K JA 1/10W
R863	401 038 0810	MT-GLAZE 22K JA 1/10W
R864	401 039 0314	MT-GLAZE 820 JA 1/10W
R865	401 038 0711	MT-GLAZE 2.2K JA 1/10W
R866	401 038 0711	MT-GLAZE 2.2K JA 1/10W
R867	401 038 0711	MT-GLAZE 2.2K JA 1/10W
R868	401 037 6714	MT-GLAZE 1.2K JA 1/10W
R869	401 038 2210	MT-GLAZE 27K JA 1/10W
R870A	401 038 0810	MT-GLAZE 22K JA 1/10W
R871	401 038 6416	MT-GLAZE 4.7K JA 1/10W
R872	401 038 3712	MT-GLAZE 33K JA 1/10W
R873	401 038 6416	MT-GLAZE 4.7K JA 1/10W
R874	401 037 5618	MT-GLAZE 10K JA 1/10W
R875	401 038 7710	MT-GLAZE 5.6K JA 1/10W
R876	401 037 5618	MT-GLAZE 10K JA 1/10W
R877	401 039 0413	MT-GLAZE 8.2K JA 1/10W
R878	401 037 7919	MT-GLAZE 1.5K JA 1/10W
R879	401 037 5618	MT-GLAZE 10K JA 1/10W
R880	401 038 6515	MT-GLAZE 47K JA 1/10W
R884	401 037 7810	MT-GLAZE 150 JA 1/10W
R885	401 038 5112	MT-GLAZE 3.9K JA 1/10W
R886	401 037 7810	MT-GLAZE 150 JA 1/10W
R887	401 038 5112	MT-GLAZE 3.9K JA 1/10W
R888	401 037 5212	MT-GLAZE 100 JA 1/10W
R889	401 037 5212	MT-GLAZE 100 JA 1/10W
R892	401 038 6416	MT-GLAZE 4.7K JA 1/10W
R895	401 037 6714	MT-GLAZE 1.2K JA 1/10W

VARIABLE RESISTOR

VR131	645 003 5531	VR 10K ALPS
VR361	645 003 5531	VR 10K ALPS
VR462	645 003 5616	VR 4.7K ALPS
VR501	645 006 5231	VR 100 ALPS
VR641	645 003 5579	VR 2.2K ALPS

TRANSFORMER

T101	610 037 4508	S COIL
T141	610 037 4522	S COIL
T431	610 000 1053	DRIVE TRANS
⚠ T451	645 014 2987	TRANS,FLYBACK
⚠ T611	645 015 7646	TRANS,POWER,PULSE
⚠ T681	610 033 3758	POWER TRANS

COIL

L001	645 008 5635	INDUCTOR,12U K
L002	645 008 5635	INDUCTOR,12U K
L003	645 002 4511	CORE,PIPE
L1002	645 002 4511	CORE,PIPE
L1003	645 001 4550	PEAKING COIL 10UHK
L1004	645 001 4550	PEAKING COIL 10UHK
L1005	645 001 4550	PEAKING COIL 10UHK
L1006	645 001 4550	PEAKING COIL 10UHK
L101	645 001 4710	PEAKING COIL 10UH J
L102	645 001 5656	PEAKING COIL 4.7UH K
L1022	645 002 4511	CORE,PIPE
L1023	645 001 4550	PEAKING COIL 10UHK
L1024	645 001 4550	PEAKING COIL 10UHK
L1025	645 001 4550	PEAKING COIL 10UHK
L1026	645 001 4550	PEAKING COIL 10UHK
L1027	645 001 5656	PEAKING COIL 4.7UH K
L1101	645 001 4550	PEAKING COIL 10UHK
L1102	645 001 4550	PEAKING COIL 10UHK
L1103	645 001 5656	PEAKING COIL 4.7UH K
L141	645 001 4550	PEAKING COIL 10UHK
L151	645 001 4635	PEAKING COIL
L152	645 002 1459	PEAKING COIL
L201	645 001 4710	PEAKING COIL 10UH J
L202	645 001 4710	PEAKING COIL 10UH J
L203	645 001 4710	PEAKING COIL 10UH J
L231	645 001 5656	PEAKING COIL 4.7UH K
L232	645 003 8518	PEAKING COIL
L431	610 078 4635	PIPECORE
L432	645 002 4511	CORE,PIPE
L441A	610 000 0605	LINEARITY COIL
L442	610 000 0278	COIL
L501	645 008 5642	INDUCTOR,3.3U K
⚠ L601	645 012 3337	LINE FILTER
L607	610 237 1000	PIPE CORE
L608	610 237 1000	PIPE CORE
L641	645 002 4511	CORE,PIPE
L642	645 002 4511	CORE,PIPE
L643	645 002 4511	CORE,PIPE
L871	645 008 2962	PEAKING COIL 5.6UH K
L881	645 012 8707	PEAKING COIL 1.5UH M

DIODE

D1005	407 063 8319	ZENER DIODE MTZJ11C
D1007	407 063 8319	ZENER DIODE MTZJ11C
D1008	407 063 8319	ZENER DIODE MTZJ11C
D1010	407 063 8319	ZENER DIODE MTZJ11C
D1011	407 063 8319	ZENER DIODE MTZJ11C
D1021	407 063 8319	ZENER DIODE MTZJ11C
D1022	407 063 8319	ZENER DIODE MTZJ11C
D1023	407 063 8319	ZENER DIODE MTZJ11C
D1024	407 063 8319	ZENER DIODE MTZJ11C
D1026	407 063 8319	ZENER DIODE MTZJ11C
D1027	407 063 8319	ZENER DIODE MTZJ11C
D1101	407 063 8319	ZENER DIODE MTZJ11C
D1201	407 053 6803	ZENER DIODE MTZ5.6C
D135	407 063 8319	ZENER DIODE MTZJ11C
D1901-1	610 269 4697	HOLDER LED A-E7GC
D1901A	407 120 9706	LED LN28RPL

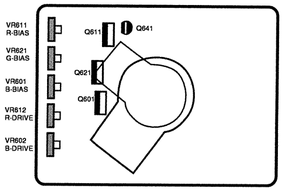
Ref. No.	Part No.	Deacription
D1903	407 063 8319	ZENER DIODE MTZJ11C
D1905	407 012 4416	DIODE 1SS133-T-77
D201	407 063 8319	ZENER DIODE MTZJ11C
D202	407 063 8319	ZENER DIODE MTZJ11C
D203	407 063 8319	ZENER DIODE MTZJ11C
D210	407 012 4416	DIODE 1SS133-T-77
D221	407 012 4416	DIODE 1SS133-T-77
D222	408 007 8607	DIODE 1N4148
D271	407 053 6407	ZENER DIODE MTZ5.1C
D361	407 063 8319	ZENER DIODE MTZJ11C
D431	407 053 8708	ZENER DIODE MTZ9.1A
D432	407 005 7328	DIODE EM01Z
D442	408 007 8607	DIODE 1N4148
D445	407 012 4416	DIODE 1SS133-T-77
D446	407 151 9003	ZENER DIODE UZ-7.5BCC
D481	407 007 7415	DIODE EU1
D482	407 012 4416	DIODE 1SS133-T-77
D501	407 005 7328	DIODE EM01Z
D502	407 118 2217	ZENER DIODE 1Z75
D603	407 009 6921	DIODE RM11C
D604	407 009 6921	DIODE RM11C
D605	407 009 6921	DIODE RM11C
D606	407 009 6921	DIODE RM11C
D614	408 007 8607	DIODE 1N4148
⚠ D615	408 009 8407	PHOTO COUPLE CNY17GF-3
D616	408 007 8607	DIODE 1N4148
D617	407 007 6616	DIODE ES1
D618	408 007 8607	DIODE 1N4148
D619	407 053 3000	ZENER DIODE MTZ11C
D641	407 007 7712	DIODE EU2A
D642	407 007 7613	DIODE EU2
D643	407 166 2303	DIODE ERC-91-02L
D644	407 166 2303	DIODE ERC-91-02L
D645	407 053 7206	ZENER DIODE MTZ6.2C
D647	407 012 4416	DIODE 1SS133-T-77
D651	407 005 7328	DIODE EM01Z
D654	407 012 4416	DIODE 1SS133-T-77
D661	409 026 8005	IC L5630
D681	407 005 7328	DIODE EM01Z
D682	407 053 6803	ZENER DIODE MTZ5.6C
D683	407 005 7328	DIODE EM01Z
D684	408 007 8607	DIODE 1N4148
D685	407 012 4416	DIODE 1SS133-T-77
D831	408 007 8607	DIODE 1N4148
D861	407 012 4416	DIODE 1SS133-T-77
D871	407 012 4416	DIODE 1SS133-T-77
D872	407 055 7927	ZENER DIODE RD3.6EL

MISCELLANEOUS

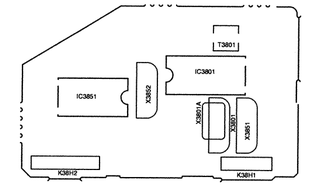
A101	645 009 5993	TUNER,U
A1901	645 020 9277	UNIT,REMOCON RECEIVER
⚠ F601	423 022 2102	FUSE 250V 4.0A
F601A	645 000 5077	HOLDER,FUSE
F601B	645 000 5077	HOLDER,FUSE
J025	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J044	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J130	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J225	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J226	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J231	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J232	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J233	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J234	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J235	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J236	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J237	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J238	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J239	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J240	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J241	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J242	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J244	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J245	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J247	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
J248	401 037 5014	MT-GLAZE 0.000 ZA 1/10W
KDY-1	645 008 4058	TERMINAL PLUG
KDY-3	645 008 4058	TERMINAL PLUG
KDY-5	645 008 4058	TERMINAL PLUG
KDY-6	645 008 4058	TERMINAL PLUG
KE-1	645 008 4058	TERMINAL PLUG
KE-2	645 008 4058	TERMINAL PLUG
KF-1	645 008 4058	TERMINAL PLUG
KF-2	645 008 4058	TERMINAL PLUG
KL	645 004 2881	PLUG,2P
KP	645 008 7288	HOUSING PLUG 5P
KQ	645 008 7264	HOUSING PLUG 3P
KR-1	645 008 4058	TERMINAL PLUG
KR-2	645 008 4058	TERMINAL PLUG
K001	645 005 5706	PHONE JACK HTJ-035-10AB
K10B	645 008 7288	HOUSING PLUG 5P
K1001	645 005 5867	21-PIN SOCKET
K1001Z	610 261 2813	MOUNTING BRKT-F2WV
K1002	645 005 5867	21-PIN SOCKET
K1002Z	610 261 2813	MOUNTING BRKT-F2WV
K1101	645 016 6433	JACK,RCA-3
⚠ PS601	408 003 6805	THERMISTOR 902P44E180MR14
SW1901	610 011 4432	SWITCH,PUSH
SW1902	610 011 4432	SWITCH,PUSH
SW1903	610 011 4432	SWITCH,PUSH
SW1904	610 011 4432	SWITCH,PUSH
SW501	610 011 2728	SWITCH,LEVER 1P-3T
⚠ SW601	645 024 0607	PUSH SW POWER SDDFC3
TP-A	645 008 4058	TERMINAL PLUG
TP-B	645 008 4058	TERMINAL PLUG
TP-D	645 008 4058	TERMINAL PLUG
TP-E	645 008 4058	TERMINAL PLUG
VR131	645 003 5531	VR 10K ALPS
VR361	645 003 5531	VR 10K ALPS
VR501	645 006 5231	VR 100 ALPS
VR641	645 003 5579	VR 2.2K ALPS
X131	421 002 4702	SAW F TSF5322
X151	645 001 7902	TRAP,CERAMIC (6.0W3)
X201	645 025 2631	OSC,CRYSTAL 4.43MHZ
X871	645 018 9593	OSC,CRYSTAL 12MHZ
Y01	645 008 4058	TERMINAL PLUG
Y02	645 008 4058	TERMINAL PLUG
Y04	645 008 4058	TERMINAL PLUG
Y05	645 008 4058	TERMINAL PLUG
Y06	645 008 4058	TERMINAL PLUG
Y07	645 008 4058	TERMINAL PLUG
Y08	645 008 4058	TERMINAL PLUG
Y09	645 008 4058	TERMINAL PLUG
Y10	645 008 4058	TERMINAL PLUG
Y11	645 008 4058	TERMINAL PLUG
Z101	610 259 7813	SHIELD CASE-A-F2RC
Z102	610 259 7820	SHIELD CASE-B-F2RC

Ref. No.	Part No.	Deacription	Ref. No.	Part No.	Deacription

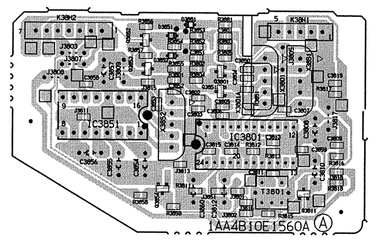
CRT Board Component Location



SIF Board Component Location

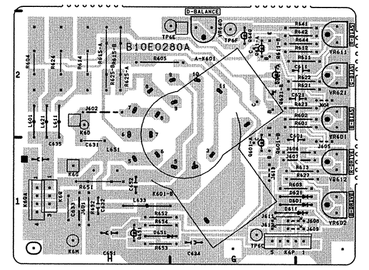


SIF Board Circuit side

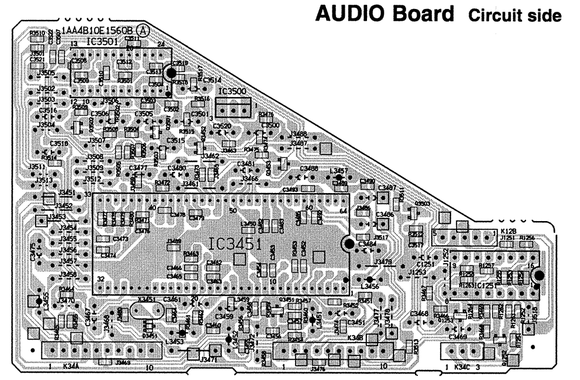


Audio Board Component Location

CRT Board Circuit side



AUDIO Board Circuit side



COLOUR TELEVISION

SANYO

CHASSIS SERIES **EB4MKII**

MODEL NUMBER **CE21DN3-B**

SERVICE REF.NO. **CE21DN3-B-01**

The service Precaution:
The area enclosed by this line (▱▱▱) is directly connected with AC mains voltage. When servicing the area, connect an isolating transformer between TV receiver and AC line to eliminate hazard of electric shock.

Product safety notice:
Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a mark ⚠ in this circuit diagram show components whose values have special significance to product safety. It is particularly recommended that only parts specified on the part service manual be used for components replacement pointed out by the mark.

Circuit diagram notes :

1. All resistance values are in ohms, K=1,000, M=1,000,000.
2. All resistance rated wattages are 1/6W unless otherwise noted.
3. Excepting electrolytic capacitors, all capacitance values of less than 1 are expressed in μF and more than 1 are pF.
4. All capacitance rated voltages are 50V unless otherwise noted.
5. All inductance values are in μH.
6. Voltage readings taken a digital voltmeter are from point indicated chassis ground. Voltage readings taken by using a colour bar signal are with all controls at normal position. Some voltages may vary with signal strength.
7. Waveforms were taken with colour bar and controls adjusted for normal picture. Waveforms were taken by using a wide band oscilloscope and a low capacity probe.
8. This circuit diagram covers a basic or representative chassis only. There may be some components or partial circuit differences between the actual chassis and the circuit diagram.
9. ■ Diode 1S1555 may be replaced with 1S2473, 1S2076 or DS472 unless otherwise noted.
   ■ Transistor 2SC536(Q,R,S), 2SC1740(Q,R,S), 2SC945A(Q,R,P) or 2SC1815(G,O,Y) unless otherwise noted.
   ■ Transistor 2SA608(E,F) may be replaced with 2SA933(Q,R), 2SA564(QA,RA), or 2SA1015(O,Y) unless otherwise noted.

Expression of capacitance and resistance in circuit diagram.

Capacitance (Example)

1000 C M 2000 D
- Characteristic
- Capacitance value (220pF)
- Tolerance (±20%)
- Kind(Ceramic)
- Rated voltage (1,000V)

J= ± 5%
K= ± 10%
M= ± 20%

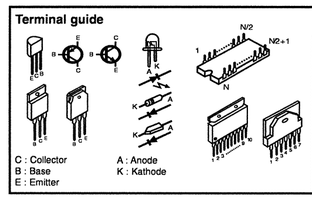
T, A, U, D : Electrolytic
C, K, B : Ceramic
F : Mylar film
M, N : Polypropylene
Z : Metallized paper

Resistance (Example)

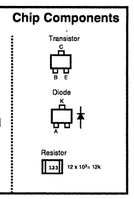
1/2 N J 1.2
- Resistance value (1.2Ω)
- Tolerance (±5%)
- Kind (M.carbon)
- Rated wattage(1/2W)

D : Carbon
N : Metallized carbon
S : Oxide metallized
W : Wire wounding
C : Solid

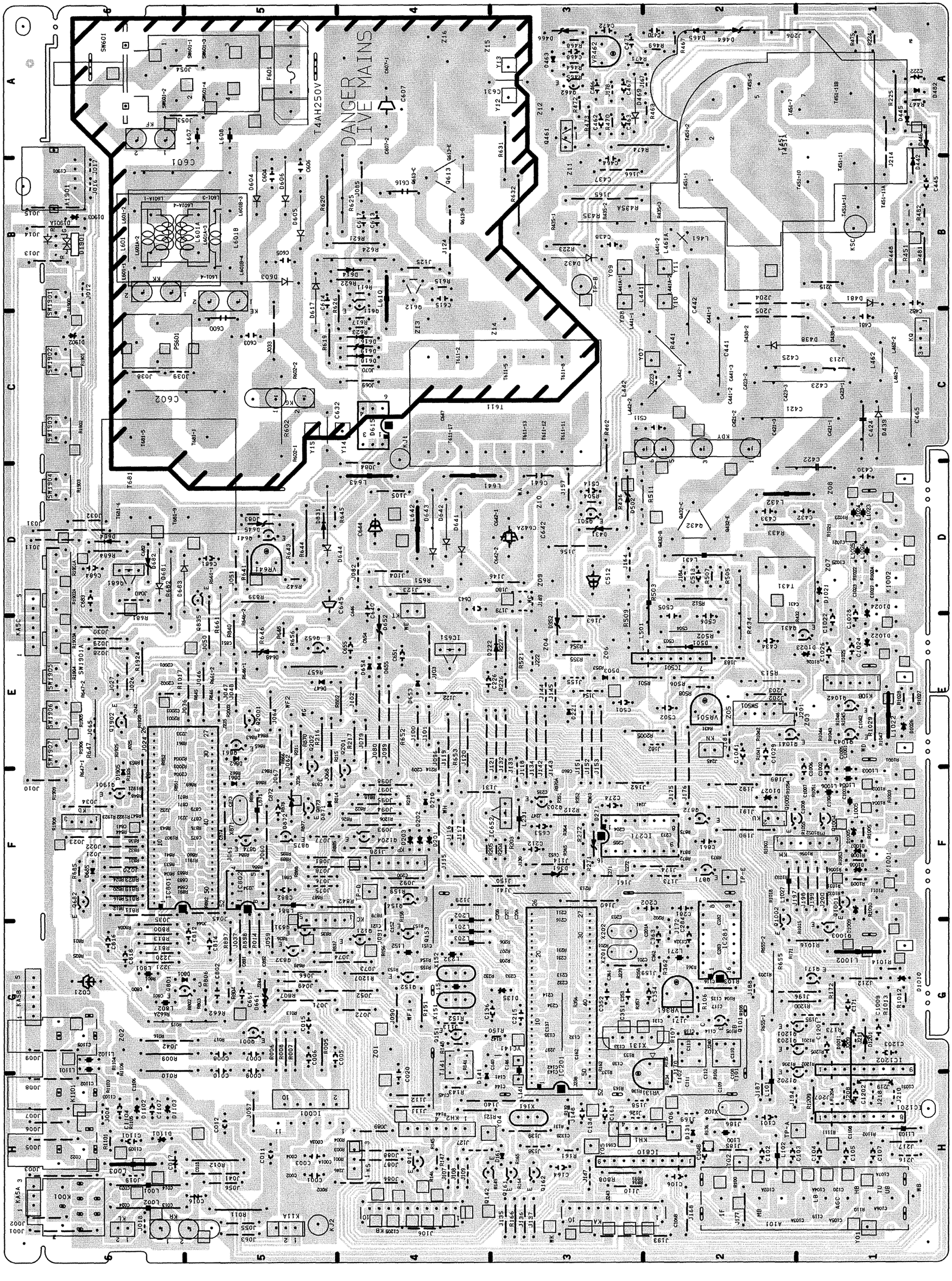
Terminal guide

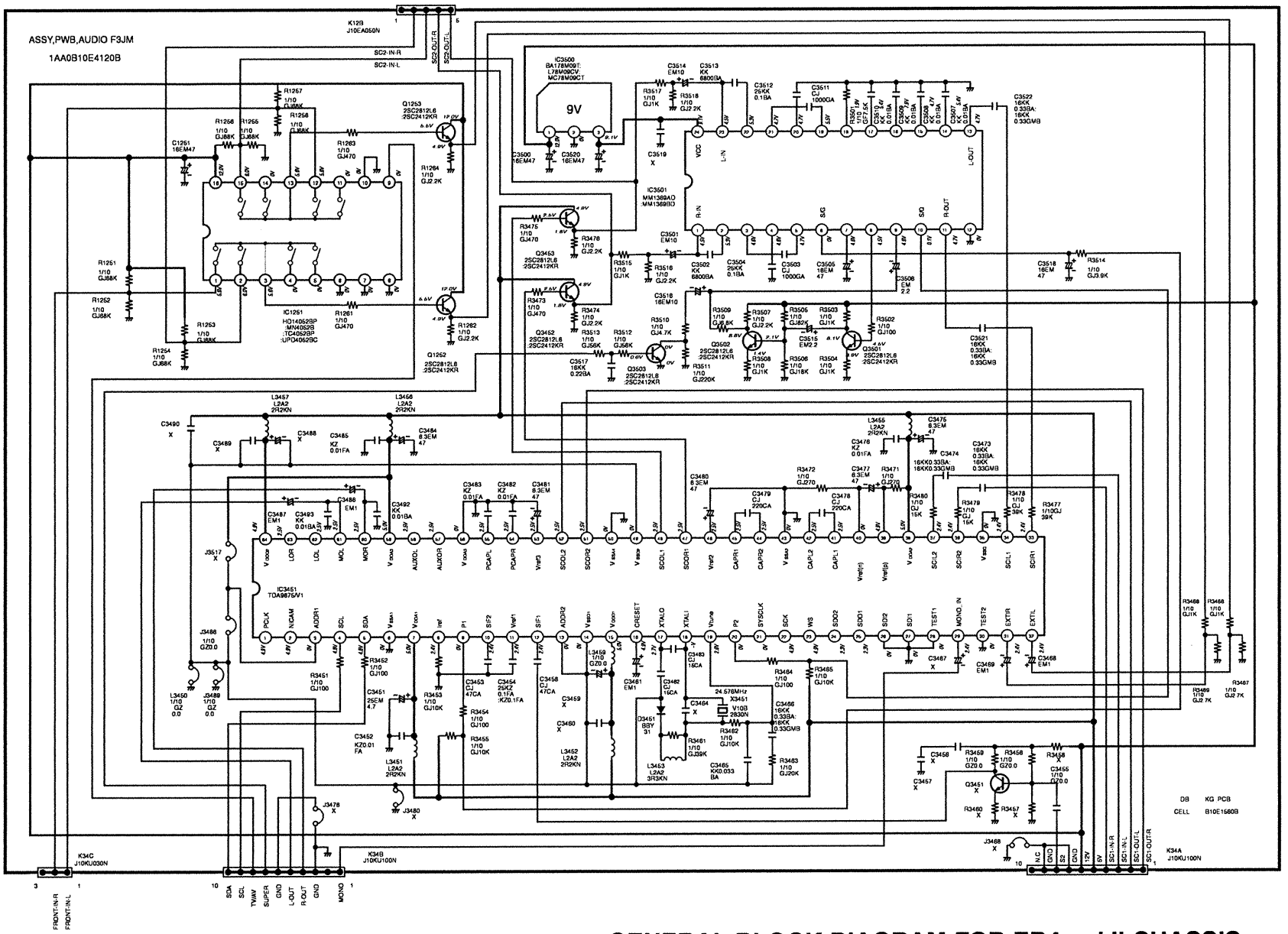


Chip Components



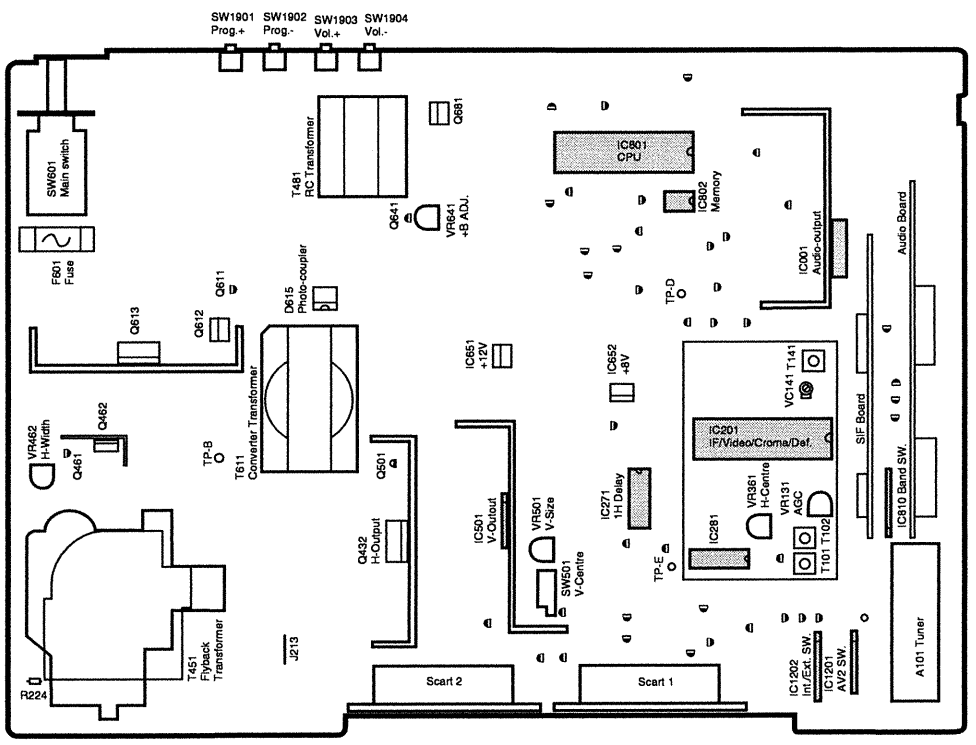
Main Board
Circuit side



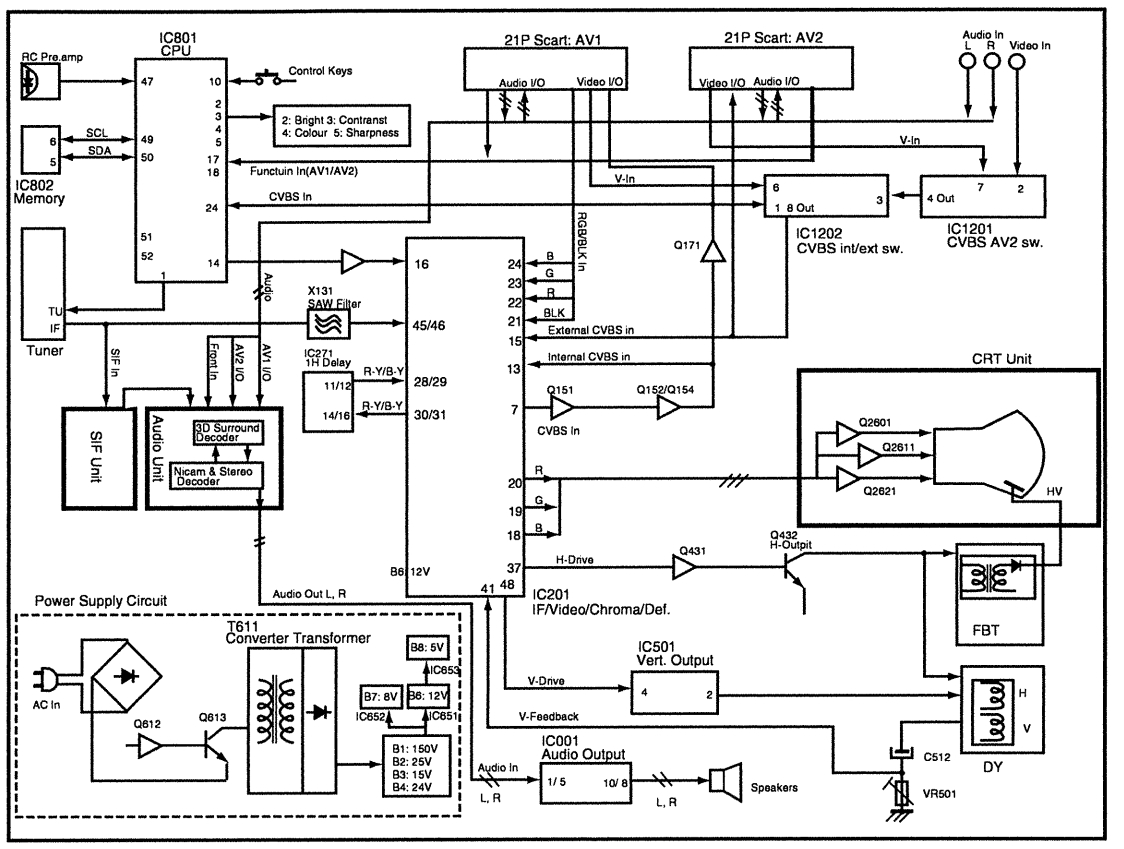


Main Board

Component Location

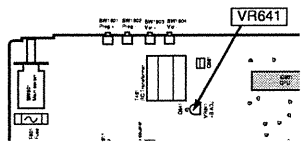


GENERAL BLOCK DIAGRAM FOR EB4 mkII CHASSIS

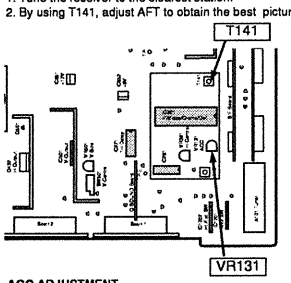


SERVICE CONTROL ADJUSTMENT

B1 POWER SUPPLY ADJUSTMENT
1. Set VR641 to be mechanical centre before pressing the main switch.
2. Tune the receiver to PAL circular pattern.
3. Set brightness and contrast controls to normal.
4. Connect digital V-meter to test point "TP-B".
5. By using VR641, adjust voltage to 130 ± 0.5 V.



AFT ADJUSTMENT
1. Tune the receiver to the clearest station.
2. By using T141, adjust AFT to obtain the best picture.



AGC ADJUSTMENT
NOTE: ***Do not attempt this adjustment with weak signal.***
1. Tune the receiver to the clearest station.
2. Set AGC VR(VR131) in direction which causes snow noise to appear, then in the opposite direction until snow noise just disappears.

GREY SCALE ADJUSTMENT

[SCREEN VR ADJUSTMENT]
1. Tune the receiver to the white pattern.
2. Set brightness and contrast controls to normal.
3. Set VR602and VR612 to be mechanical centre.
4. Turn VR601, VR611 and VR621 fully counter-clockwise.
5. Set mode to one horizontal scanning line, how to set refer to "service mode"
6. Set screen VR for one colour to be just visible.

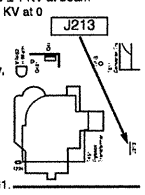
[BIAS VR ADJUSTMENT]
7. By using VR601, VR611 or VR621, adjust line to be white.
8. Set screen mode OFF, how to set refer to "service mode"

[DRIVE VR ADJUSTMENT]
9. By using VR602 and VR612, adjust white balance.

HIGH VOLTAGE & WIDTH ADJUSTMENT

[HIGH VOLTAGE ADJUSTMENT]
1. Tune the receiver to circular pattern.
2. Set brightness and contrast controls to maximum.
3. Connect digital V-meter to both terminals of R224, and high voltage meter to CRT anode.
4. Confirm high voltage to be 25.0 ± 1 KV at beam current 1.1, and less than 28.0 KV at 0 beam current.

[H-WIDTH ADJUSTMENT]
5. If H-width is too wide or narrow, connect or disconnect a lead wire J213**(for 21 inch)**.
6. Reconfirm high voltage.

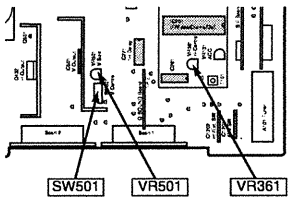


H-CENTRE ADJUSTMENT
1. Tune the receiver to circular pattern.
2. Adjust H-centre by using VR361.

V-CENTRE ADJUSTMENT
1. Tune the receiver to circular pattern.
2. Adjust V-centre by using SW501.

V-SIZE ADJUSTMENT
1. Tune the receiver to circular pattern.
2. Adjust V-size by using VR501.

FOCUS ADJUSTMENT
By using FOCUS VR, adjust focus control for good scanning lines.



CIRCUIT ALIGNMENT

VIF alignment

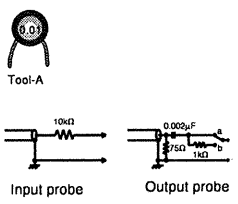
SETTING		Adjustment	Waveform
DC 15.5V AGC voltage (4.3-4.5V) Output probe Input probe Marker frequency Sweep ATT 0dB=176mVrms/75	C644 + IC201-pin48 IC201-pin45 (Side b) IC201-pin7 39.5MHz 20dB	By using T141, adjust "P" to be maximum amplitude.	P

Trap alignment (Only required for UK model)

SETTING		Adjustment	Waveform
DC 15.5V Output probe Input probe Marker frequency Sweep ATT 0dB=176mVrms/75	C644 + Tuner IF (Side a) Q101-C 41.5MHz 11dB	By using T101, adjust "A" to be minimum amplitude.	C, P, A

SIF alignment

SETTING		Adjustment	Waveform
DC 12V AGC voltage(5V DC) Output probe Input probe Sweep ATT Marker Frequency Tool-A	IC3801-pin9 IC3801-pin13 IC3801-pin5 (Side b) IC3801-pin17 10dB 39.5MHz IC3801-pin6 and ground	1. By using T3801, adjust the VCO oscillation to be "P".	P



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